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ABSTRACT

The manual provides guidelines for using the problem-oriented approach to teach the self-care skills of self-feeding, dressing, and toileting to severely handicapped students. The approach consists of identifying the problem that is an obstacle to acquisition of a particular skill, selecting and evaluating intervention techniques, and establishing written objectives. General guidelines include explanations of alternative intervention (e.g, positioning equipment) and instructional strategies; ways to use instructional strategies (such as what and how to teach, and how to determine antecedent conditions and consequent events); and instruction for use of the manual. Guidelines are provided for five self-feeding skills (e.g., finger feeding, spoon feeding, cup drinking); four dressing skills (e.g., undressing, shoe tying); and six toileting skills (e.g., bladder training, transfer on/off toilet). The following components usually are included for each of the self-care skills: general discussion; diagramed training sequences showing component areas (matched with normal developmental milestones); expected outcomes; task sequences; essential prerequisite skills; training objectives; diagramed training chart (to determine where to begin training); diagramed assessment strategy chart (to identify problem, select strategy, observe child, and interpret results); instructional strategies; instructional flow chart; recording form; behavior graph; descriptions of adaptive devices; and a reference section. Sources of adaptive equipment are listed with addresses and such categories as "transportation" and "adaptive chairs." (MC)

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TEACHING SELF-CARE SKILLS TO SEVERELY HANDICAPPED STUDENTS

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GENERAL GUIDELINES

INTRODUCTION

The severely handicapped individual's ability to demonstrate basic skills frequently is hindered by individual combinations of limitations which produce difficulties with receiving information from the environment, processing that information, or interacting with or responding adaptively to the incoming environmental stimulation. Although a blind or deaf person's limitations are restricted to reception of incoming stimulation or a motorically handicapped child's problems confined to accurate response to that stimulation, the limitations most frequently observed in individuals with severe handicaps are individual-specific combinations related to all aspects of receiving, processing, and responding to the environment. These combinations of problems necessitate the development of individualized programming in order to enable the individual with multiple handicaps to perform fundamental skills.

The rationale presented in this manual emphasizes the identification of problems which specifically interfere with an individual's acquisition or demonstration of particular skills. The process is one of problem-orientation and involves finding solutions by:

> IDENTIFYING those particular and individual problems which are influencing the student's ability to demonstrate competency in a given area.
>
> SELECTING intervention techniques which will be effective in remediating or alleviating the problem(s) and EVALUATING the effectiveness of those selected techniques.
>
> ESTABLISHING written objectives which specify the antecedent arrangements and consequent events as well as the criteria for achievement of the specified skill.

In the problem-oriented approach, the development of the severely handicapped child is viewed as DIFFERENT from that of the normally developing child. The approach focuses on teaching the child to acquire competencies in critical areas of skill development rather than on assisting the student to approximate the areas and ages and stages sequences of the maturational developmental model. It advocates not only the identification of obstacles to skill attainment, but also bypassing those developmental skills which the student may never acquire or demostrate independently.

Several assumptions underly the problem-oriented approach. The first states that the physical limitations which the severely handicapped child demonstrates preclude achievement of all skills according to the ages and stages model of development. Although normally developing children acquire most skills in generally the same sequential order, children with severe or multiple handicaps are not normally developing children and subsequently may not attain all skills in the sequence demonstrated by normal children.

Related to the first assumption is a second assumption which states that skills which precede the development of other skills in the ages and stages model of normal development are not necessarily pre-requisite forms of behavior to the new development of later skills. Although the normal child learns to chew solid foods before he begins to self-feed, the severely handicapped child can be taught the critical skill of independence in self-feeding, even if he is unable to chew. Although chewing precedes self-feeding in normal development, chewing is not a prerequisite skill to self-feeding. The sequence of development in the ages and stages model does not always provide the order in which skills should be taught to the child with severe handicaps.

The third assumption states that the severely handicapped student must be taught to acquire skill competency and that the methods used to teach skill acquisition may be different from the methods by which the normally developing child acquires those same skills. Most children achieve independent toilet habits with a minimum of training. The twelve year old child with severe motor dysfunction will require specific intervention, both in antecedent arrangements and in consequent events in order to achieve similar independence in toileting.

The child with motor dysfunction may never be able to walk to the bathroom and get on and off the toilet independently. The severity of the motor dysfunction may preclude the demonstration of these skills. The fourth assumption states that the severely handicapped child often demonstrates skill competency in a manner that is qualitatively different from normal.

When compared with the normally developing child at any given chronological age, the severely handicapped child typically demonstrates severe deficits in skill attainment. Educational programming is often directed toward teaching those skills which the child does not demonstrate in the sequential order characteristic of normal development. For instance, if the child is unable to grasp objects well, he may be given general instruction in grasping before he is taught to hold a spoon for self-feeding. Some children with severe motor dysfunction may never learn to grasp objects well because of the limitation of severe increased tone in the arm and hand. Focusing programming on the development of grasp directs instruction to teaching the student a skill which she/he may not have the potential to acquire because of the problem with severe hypertonus.

In the problem-oriented approach, severe increased tone (hypertonus) in the arm and hand would be identified as an obstacle to the development of independent grasping of a spoon for self-feeding. An adaptive spoon would be employed as an alternate strategy which would allow the child to demonstrate competency in self-feeding without being able to grasp either objects or the spoon independently. The use of the alternate strategy bypasses the grasping skill which is prerequisite to self-feeding. The fifth assumption states that the severely handicapped child's programming should provide alternate strategies for assisting the child to acquire skill competency and that this type of an approach will be more effective and functional than one which teaches the student to acquire skills in the same order and manner in which those skills are attained by the normally developing child.

The information in this module relates to applying the problem-oriented approach to teach self-care skills of self-feeding, dressing, and toileting. Each of these skill areas are a part of a wider range of community living skills including meal preparation, clothing management, and grooming that must be acquired for severely handicapped people to function as independenty as possible as adults. Individualized Educational Programming (Bricker and Campbell, 1982a) describes procedures for developing effective instructional programs for severely handicapped students. Problem Oriented Approaches to Feeding Handicapped Children (Campbell, 1982) outlines procedures for teaching oral-motor skills related to eating and drinking. Teaching Your Motor Delayed Child (Hanson and Campbell, in press) provides information for parents (and others) to help teach mobility, pre-linguistic/communication, and other forms of functional goal-directed movement.

The specific steps required to identify the problem that is an obstacle to achievement of a particular skill occurs through the following steps:

1) SCREENING: This step is designed to control variables which are extraneous to the physical limitations which are preventing the child from achieving a particular skill. Environmental factors are "maximized" to reduce the probability of these factors confounding the child's actual potential for skill achievement.

2) ASSESSMENT STRATEGY: Controlled input occurs in this step in order to achieve as objective an idea as possible of the child's abilities to perform a particular skill.

3) OBSERVATION: The child's response to the controlled input of the assessment step is carefully observed in order to gain as much objective information as possible about both the QUANTITY and QUALITY of the child's response pattern.

4) INTERPRETATION: The child's response pattern is interpreted in order to determine a working decision about "why" the child responded in a particular manner. This step is the summation of the PREPARATION, ASSESSMENT, and OBSERVATION steps and forms the basis for SELECTION OF INTERVENTION TECHNIQUES.

SPECIFIC PROBLEM IDENTIFICATION

Identification of the problem which the student demonstrates is the result of the evaluation component. The SPECIFIC PROBLEM IDENTIFICATION is a tentative working decision. If the problem identification is "correct", if intervention techniques are chosen accurately, the child should learn with

intervention to achieve the skill being evaluated. Evaluating the effectiveness of the selected intervention techniques provides knowledge that allows an achievable goal to be more accurately stated.

ACHIEVABLE GOALS

If the child's problem has been specifically and accurately identified and if intervention techniques have been effective in aiding the child to demonstrate potential for skill acquisition, establishing the general goal should be an easy outcome of the evaluation-problem identification process. Achievable goals are generally stated in non-specific terms. The goal statement provides the general direction from which the specific behavioral objective will be written. The goal may be long term. It may be the terminal objective which the child will demonstrate to show skill acquisition in a particular area.

Examples of achievable goals for independence in eating and drinking, toileting, and dressing are included in the sections which follow in this manual.

WRITTEN OBJECTIVE

The written objective states the behavior expected by the child within specified conditions of antecedents and consequences. The written objective states the achievable goal (or a component, step, of that goal) in measurable terms. The criteria established as part of the written objective determine what level of attainment is required before reaching a new step/skill. New objectives can be written to state new behavior which the child will be taught. The direction process of the model can again be initiated in order to determine new skills which the child can be taught.

INTERVENTION STRATEGIES

THE CONCEPT OF INTERFERING BEHAVIORS

Children with handicaps frequently demonstrate a variety of combinations of difficulties -- such as motor dysfunction, blindness and deafness. Others show limited preferences for foods, toys, or activities. Some handicapped children may demonstrate inappropriate behavior including self-stimulation, self-abuse, light gazing, mouthing, and other atypical behavior forms. Whether the child has specific deficits or inappropriate behavior (or the more frequent combination of both biological deficits and inappropriate behavior), these difficulties constitute problems which interfere with the acquisition of normal, functional skills. If the child is hitting himself or grinding his teeth, he is doing these things instead of self-feeding, manipulating a toy, or interacting with others. Similarly, if the child has severe motor dysfunction with abnormal postural tone, that abnormal tone will produce abnormal forms of movement which will interfere with the child's ability to perform a skill with normal movement patterns. If when the child stands up, his legs bend from increased tone in the muscles that bend the hips, the abnormal pattern of leg bending is occurring instead of a pattern of straight legs which would more appropriately support his body weight against gravity.

Some types of interfering behavior are reversible or extinguishable, but others are not. Almost all forms of interfering behavior are changeable and can be modified through correct selection and implementation of intervention strategies. Inappropriate behavior that has been acquired (such as head banging, finger sucking, etc.) is more subject to change than are those forms of behavior which are deficit-oriented. Self-stimulating and self-abusive behavior is thought to be reinforcing or pleasurable for the student engaging in those activities. These forms of inappropriate behavior can be modified by replacing them with more functional skills. This can be done, in principle, by making functional behavior more reinforcing to the child than engaging in the inappropriate behavior. Systematic use of consequent events (reinforcers) in combination with modification of antecedent events (those which precede the demonstration of the inappropriate behavior) will enable the child to demonstrate the more appropriate skill.

TYPES OF STRATEGIES

The focus in the problem-oriented approach is on determining those specific forms of behavior which are interfering with the child's ability to acquire a specific functional skill. These behavior forms may be deficit-oriented or various kinds of inappropriate behavior. Intervention techniques are selected and evaluated after the behavior has been identified. Those that are effective in remediating or alleviating the problem behavior are implemented as part of the child's prescriptive programming.

The effectiveness of the intervention technique(s) chosen is evaluated by the extent to which that technique produces change in the child's performance of a specific skill. Inappropriate behavior can generally be extinguished through implementation of systematic and consistent instructional strategies. With deficit-oriented interfering behavior, use of alternate strategies will minimize the effect(s) of the interfering behavior in specifically identified skill areas. In most instances, the alternate strategy must be used in conjunction with an appropriate instructional strategy for intervention to be maximally effective. The alternate strategy is a modification of antecedent events and its use increases the probability that the child will respond correctly. The instructional strategy provides the method by which the child will be taught to accurately perform the specified skill.

ALTERNATE STRATEGIES:

Alternate strategies assist the child to "bypass" the acquisition of a particular skill. For instance, if the child has weak grasp, selection of a spoon which straps to the hand allows the child to learn to self-feed without demonstrating a holding scheme. Alternate strategies include:

Positioning Equipment

Skill-Specific Adaptive Equipment

Alternate Response Modes

INSTRUCTIONAL STRATEGIES:

Instructional strategies are used to teach the student to acquire a specific skill. They involve modifications of antecedent arrangements and consequent events in order to assist the child to perform in the desired way. There are many types of instructional strategies which have been used successfully to teach self-care skills of self-feeding, dressing, and toileting. Instructional strategies which modify the antecedent conditions include: demonstration, placement of materials, physical guidance, structuring response possibilities, and verbal direction. Those which modify the response pattern are chaining and shaping. These strategies, in combination with those that modify the conditions consequent to behavior response, develop the desired response pattern. However, once the desired behavioral response has been demonstrated, consequences to that behavior must be consistently and systematically varied to insure the maintenance of the skill.

SELECTION OF STRATEGIES:

Selection of alternate and instructional strategies is based on the identification of the problem which is interfering with the student's performance of a particular skill. If the working hypothesis identifies an interfering behavior which is deficit-oriented, alternate strategies should

be determined before instructional strategies are employed. If the interfering behavior appears to be an inappropriate behavior or one that is not deficit oriented, instructional strategies should be determined. Use of the flow charts provided for self-feeding, dressing, and toileting, will assist in identifying the type of problem behavior which is interfering with skill acquisition.

SPECIFIC INSTRUCTIONAL STRATEGIES

An instructional sequence consists of the conditions which precede a given response, the response itself, and the events which immediately follow that response. Those conditions which follow the response are called consequent events. Instruction consists of systematically varying the antecedent and/or consequent events in a manner which produces, maintains, or extinguishes a specified or desired response. An instructional strategy is a chosen technique which varies the antecedent or consequent conditions systematically.

ANTECEDENT EVENTS:

Any event which precedes an observed response can elicit that response. The screaming of one child in a classroom may act as a demonstrated behavior for other children to model or imitate. Instruction involves the deliberate arrangement of those events which precede a desired response in such a manner as to act as a stimulus for the desired response. Holding a coat out for a child may signal the desired response of his placing his arms into the sleeves. The antecedent event of holding the coat is a stimulus for the desired response of putting on the coat. An antecedent event is a stimulus for a desired response only when the response consistently occurs after the antecedent event.

CONSEQUENT EVENTS:

Those events which follow a given response can strengthen or maintain that response. If a child misbehaves in the classroom and the other children laugh or show approval in some way, the laughing and attention from the other children can increase the occurrence of the misbehavior. Similarly, if a child who is being toilet trained is scolded excessively for wetting his pants, the attention received for having wet pants can outweigh that received for eliminating on the potty. Any event which follows a given response and which increases the frequency of that response acts as a reinforcing agent.

The concept of reinforcement frequently is misunderstood by teachers, parents, and therapists who may see systematic reinforcement as unnecessary (the child should want to do the activity for the sake of the activity itself) or as a bribe or reward. The tasks that severely multihandicapped children must acquire often are difficult to perform, require considerable practice, and are not pleasurable in and of themselves. Therefore,

providing systematic consequences for correct performance not only provides the child with clear feedback (knowledge of results) that can speed the training of a particular activity, but also lets the student know that the difficulty of performance is respected. In essence, many parents of normally developing children use this same strategy to encourage their children to acquire competence in piano playing or to put forth maximum effort to achieve in school. As adults, we often set up systems for ourselves that "reward" us for continuing to persevere in a difficult task such as stopping smoking or saving money.

Identifying and providing preferred consequences for correct performance is essential in teaching severely handicapped children to perform basic skills. For instance, a child is not likely to quickly learn how to put the spoon in his mouth if the food is disliked. Dressing may be easier to teach if the result of putting a coat or sweater on is to engage in a preferred activity such as going outside. Putting the coat on just to put it on (for practice) is not likely to be motivating for the student. The "best" consequences for correct performance are obviously those that are natural -- such as receiving food for putting the spoon in the mouth. However, some severely handicapped individuals may not have preferences that occur functionally in their environments. In those instances, preferred (and perhaps contrived) consequences may be necessaary in order to strengthen the behavior being taught and practiced. For instance, for a student who does not appear to prefer any type of mealtime food, self-feeding may need to be initially taught only with ice cream or highly "special foods" (Bricker and Campbell, 1982b).

The important point to remember is that none of us is willing to work hard for "no reward". Most teachers would not go to work and teach children simply for the pleasure of the activity and without sufficient salary and benefits!!!

BEHAVIORAL RESPONSE:

A student may respond correctly, incorrectly, or with an approximation of the correct response---or the student may not respond to the stimulus at all. The desired response or expected response must be carefully and operationally defined in order for the teacher, parent, therapist, or trainer to determine the adequacy of the response. The more carefully the response is described, the easier it will be for several people to agree on the accuracy of the student's response. For instance, if the expected behavior is described only as "puts spoon in mouth", the student who got the spoon in his mouth by bending over and bringing his mouth to the spoon would be correct! A statement such as "holds spoon, brings spoon to mouth with elbow flexion and shoulder in a forward flexed and abducted position" leaves less question in terms of accuracy and response. Many therapists, teachers, and parents do not know exactly what response is desired from the student and therefore allow the student to be reinforced equally for correct and incorrect performances.

THE USE OF INSTRUCTIONAL STRATEGIES IN SELF-CARE PROGRAMMING

WHAT TO TEACH?

Teaching activities may be classified as skill acquisition or behavior deceleration. In the problem-oriented approach, instructional areas are determined on the basis of priority child-needs. If a child is self-stimulating by hand gazing instead of self-feeding, the instructional priority might be self-feeding. In order to teach the child self-feeding, the behavior of hand gazing which is interfering with the child's ability to acquire self-feeding skills must be decelerated or extinguished at the same time that the priority skill acquisition of self-feeding is accelerated.

Once the priority instructional area(s) and instructional target(s) have been identified, specific targeted responses must be described. The flow charts in self-feeding, dressing, and toileting provide the basis for identifying target acceleration or skill acquisition responses. However, more specific target behavior can be described by the teacher through task analysis or may be obtained by using published task analysis materials. References for task analysis materials are cited in the bibliography.

The instructional acceleration target should be part of an overall sequence of behavior. The competency-based training sequences provided for self-feeding, dressing, and toileting outline the steps of general behavior that a student must acquire in order to demonstrate full independence in the specified instructional area.

The problem which the student demonstrates is the instructional content, the "what to teach". If other forms of behavior are interfering with the child's performance of a specified priority skill, the instructional content may consist of both an acceleration and deceleration target. If the interfering behavior is of a deficit-nature, an acceleration target may be specified after alternate strategies have been determined.

DETERMINING WHAT TO TEACH:

OBJECTIVELY OBSERVE CHILD	List all types of behavior which the student demonstrates that are inappropriate and interfering with skill acquisition.
PROBLEM IDENTIFICATION	Identify - inappropriate/interfering behavior that is a priority for extinguishing. DECELERATION TARGET(S).
	Identify those forms of behavior that are a priority for skill acquisition. ACCELERATION TARGET(S)

SPECIFIED TARGET BEHAVIOR
SPECIFIED PROBLEM IDENTIFICATION — Specify as concisely as possible the specific behavioral response that will be required from the child.

HOW TO TEACH?

Once the exact response that will be required from the child has been specified, antecedent and consequent events can be systematically identified and varied to teach skill acquisition, to maintain the skill once it has been acquired, and to decelerate or extinguish inappropriate behavior that interferes with skill acquisition.

DELIBERATE ARRANGEMENT OF ANTECEDENT EVENTS:

Cueing, demonstration or modeling, placement of materials, physical guidance, structuring response possibilities, and verbal direction are possible ways in which antecedent events can be deliberately arranged to act as a stimulus for a desired response. Which of these arrangement(s) elicits the desired response most effectively and consistently with a given child can be determined by trying each arrangement separately and assessing the extent to which the desired behavior results.

Alternate strategies are deliberate arrangements of antecedent events which structure the response possibilities. The possibility of correct responding is increased when positioning and/or adaptive equipment is used with an individual child.

Antecedent events are types of instruction. It is important to determine how much instruction the child requires in order to respond in the desired manner. The end result of instruction is the child's independent performance of the required skill in response only to an environmental antecedent event. The child who begins to eat when his lunch is placed in front of him is performing a desired behavior in response to the antecedent stimulus of food placed in front of him. The child who eliminates when placed on the potty is responding appropriately to the antecedent stimulus of being placed on the potty. These are quite different forms of behavior than those demonstrated by the child who must first be instructed to eat or to eliminate before demonstrating the desired response.

DELIBERATE ARRANGEMENT OF CONSEQUENT EVENTS:

The deliberate arrangement of consequent events serves to strengthen, maintain, or extinguish a specified response. If tokens, food, money, or other forms of reinforcement are systematically utilized, the consequences are contrived. Non-contrived consequences are those found in the child's natural environment and include social reinforcement or other reinforcing events provided by the natural environment.

Environmental response to behavior seldom occurs in a systematic manner. Contrived consequences can be applied systematically to specified responses and, when applied consistently, are more effective in teaching skill acquisition or in eliminating interfering behavior. Another module, Motivating Behavior Change (Bricker and Campbell, 1982b), describes procedures for using consequent events to alter behavior.

DETERMINING HOW TO TEACH:

DETERMINE POTENTIALLY REINFORCING CONTRIVED AND NATURAL EVENTS	Objectively observe the child in the classroom environment. Identifying events that appear reinforcing (parents or child care workers may also be consulted to determine those things which the child seems to "like"). List all potential natural reinforcers. List all potential contrived reinforcers.
DETERMINE ANTECEDENT ARRANGEMENTS	Reasonably judge the number of antecedent arrangement(s) that will be necessary for the child to perform the skill.
INSTRUCTIONAL PROGRAM	Develop the written objective specifying antecedent events which will be used, consequences, and how the consequences will be applied.

FADING:

In order for the child to develop full independence in performing the desired behavior, BOTH antecedent events and consequent events must be faded as the child demonstrates greater response proficiency. Several antecedent events may be necessary in the initial stages of acquisition to elicit the desired response and highly reinforcing consequences for each approximation of the correct response may need to be provided.

An environmental event can only become an antecedent stimulus for a desired behavior if other antecedent events are faded. Prompts such as cueing, physical guidance, and verbal instruction may be necessary initially but must be systematically dropped so that the environmental event by itself will be an effective elicitor of the desired response. Contrived consequences may be faded from one:one scheduling to interval or ratio scheduling to intermittent reinforcement for correct responding. Natural environmental responses are most frequently intermittent. Although acquisition of behavior occurs more readily with one:one reinforcement, behavior is maintained more effectively with intermittent scheduling of natural reinforcers. A child is not able to perform a skill fully independently until an environmental antecedent event elicits a desired

response that is maintained with natural reinforcement from the environment.

POTENTIAL ANTECEDENT ARRANGEMENTS

Many modifications of antecedent events have been effective in training children to perform self-care skills when used with appropriate and systematic reinforcement. Cues, physical guidance, and verbal direction are examples of methods that individually or collectively are effective elicitors of self-care skill behavior.

GUIDANCE SEQUENCE:

SYSTEMATIC REDUCTION OF THE AMOUNT OF PHYSICAL ASSISTANCE NEEDED BY A STUDENT TO PERFORM THE DESIRED RESPONSE:

Will perform only with total physical guidance, cueing, and verbal direction.	Instructor physically moves child through the required behavior while simultaneously directing the child verbally.
Will perform with physical prompt and verbal direction.	Instructor allows child to perform as much of the action as possible but uses minimal physical guidance as a "reminder" (prompt) in conjunction with simultaneous verbal direction.
Will perform with cueing and verbal direction.	Instructor "reminds" child by pointing, touching the child, or other cueing behavior while simultaneously directing the child verbally.
Will perform with verbal direction only	Instructor tells the child what to do with verbal instruction.
TOTAL INDEPENDENCE	Child performs skill without verbal direction to elicit the desired response.
GENERALIZATION	Child performs skill in response to antecedent stimulus event(s) present in the natural environment.

The GUIDANCE SEQUENCE demonstrates a systematic method to both determine the antecedent conditions necessary to elicit a desired response and to fade those arrangements until the point where the stident performs the desired response in any environmental situation. By starting from the least amount of instruction (verbal direction only) and working backward to physical guidance, the amount of antecedent structuring necessary to elicit

a given response in a given child can be determined. The sequence can then be used as a rough guide for systematic fading of the number of antecedent arrangements required in the instructional situation.

The GUIDANCE SEQUENCE is especially useful in teaching self-care skills of self-feeding and dressing. When used in teaching skill acquisition, the antecedent event(s) must be part of a whole instructional sequence that also includes a clearly specified response and consequent events to that response.

DEMONSTRATION:

Demonstration of modeling may be an effective antecedent arrangement for a child with good visual attention and imitation skills. The use of demonstration is more applicable to self-feeding and dressing than to toileting! Demonstration should be given with the instructor seated next to the child and not opposite from him when used to teach self-feeding or dressing. The student can imitate images reflected in a mirror. Demonstration may be given by itself or in combination with cueing or verbal direction.

PLACEMENT OF MATERIALS:

Where the objects used in a particular skill acquisition sequence are placed in relation to the child can have an influence on the probability of correct responding. A child might scoop food more readily if the dish is placed to one side of him instead of directly in front or he might drink more independently if the cup is placed within easy reach. In dressing, placement of clothing in relation to the child has a direct relationship to the child's ability to independently put his clothing on and can avoid difficulties with front/back and right/left relationships. Instructions for placement of materials in dressing are found under alternate strategies.

STRUCTURING RESPONSE POSSIBILITIES:

Alternate strategies, toilet scheduling, clothing modification, and clothing size are examples of structuring response possibilities to insure success. In toilet training, structuring response possibilities is crucial to rapid toilet training.

To determine the most probable time for response in toileting, an observational (baseline) schedule should be made for the student. The following is a suggested scheduling procedure:

> Make a chart with Monday to Friday across the top and slots with every 15 minutes of the school day down the side.

Check the child every 15 minutes. (It is sometimes helpful to set a timer for 15 minute segments so that the child is checked consistently.)	Indicate if the child is wet (w) or dry (d) or soiled (BM).
Check the child for approximately one week.	Determine if the child consistently wets or soils at specified periods of time. If no consistent patterns are present, continue the observational schedule for an additional week. If no "trends" are obvious, re-check the toileting prerequisite skills.

The results of the schedule indicate that most likely times during the day that the child will eliminate. Placing the child on the potty at these indicated times of day is one way to structure response possibilities and increase the probability of successful responding.

POTENTIAL CONSEQUENT EVENTS

A contrived reinforcer may only increase the frequency of a desired response for a specified period of time. For some children, a reinforcing event may not be strong enough to maintain behavior patterns for unlimited periods of time. The child may not view the reinforcer as worth working for over long periods of time or he may become bored by the event. If the same reinforcers are used to maintain all classroom behaviors, the reinforcer will probably be less likely to strongly reinforce behaviors desired at the end of the school day.

Once a potential reinforcing event has been identified, its strength can be determined by testing how hard the child will work to obtain the reinforcers. If an event is strongly reinforcing, the exptected behavior can be more difficult for the child than if the event is only a weak reinforcer. Reinforcing events can be expanded into sets or groups of reinforcers by determining the specific properties of the event which potentially cause it to be reinforcing for the child. Playing with a toy train might be identified as reinforcing for a particular child. If the properties of the toy train are identified as, for example, movement and noise, other toys which also produce movement and noise will also be potentially reinforcing. Identifying reinforcing sets of events maintains the strength of the reinforcer properties. A child may accommodate or become bored by a toy train but might continue to work for time to play with the toys which make noise and move (Bricker & Campbell, 1982b).

RESPONSE APPROXIMATIONS

Shaping is a technique that is used in conjunction with systematic and consisent reinforcement. In the shaping process, approximations of the correct (terminal) response are successively reinforced until the initial response is shaped into the desired response. Initial responses which are not quite the desired response are reinforced but the student is encouraged to demonstrate responses which are closer to the final expected response. Shaping can be used in self-feeding training by initially reinforcing the behavior of hand to mouth even if the child does not get the spoon into his mouth. Later, he will not be reinforced until he successfully gets the spoon into his mouth and the food off the spoon.

Chaining is a technique where small components of the final response are learned individually and then put together into the final response form. Use of task analyses sequences for skill training using chaining procedures is essential. If the steps are too large or are inappropriate, the chaining will not be successful. Responses can be chained in a forward or backward sequence. A child who is able to pick up the spoon and who can independently put the spoon in his mouth would next be expected to pick up the spoon, put it in his mouth, and take it out of his mouth in a forward chaining sequence. A dressing program which had the child pull up his pants from his thighs and then pull up his pants from his ankles would be an example of a sequence of backward chaining.

A student must be able to demonstrate some form of the response behavior for which to receive reinforcement if systematically applied reinforcers are to be effective in strengthening, maintaining, or extinguishing a response pattern. Most children have some form of the final desired behavior which can be shaped into the expected terminal response, however, skills must be broken down into minute parts in order to identify an acceptable initial form of the behavior. If dressing were a priority target area for a child, touching a specified piece of clothing would be acceptable as the initial form of behavior. Through systematic reinforcement and use of shaping, that initial touching response could gradually be developed into holding the piece of clothing, putting one extremity into the leg/arm of the clothing, through successive sequential steps which would ultimately lead to a dressing behavior of putting on a specified garment.

Physical manipulation is also effective in providing the initial behavior to be systematically reinforced. With children who do not seem to emit even the simplest form of acceptable behavior, the instructor can physically manipulate the child to provide the response form to be reinforced.

INDIVIDUALIZED TRAINING IN SELF-CARE SKILLS

This module is divided into three basic areas of skill acquisition -- self-feeding (eating and drinking), dressing/undressing, and toileting. Each of these areas is organized to provide information about assessment and alternate intervention strategies as well as to illustrate applications of each step of the problem-oriented process. To use these materials most effectively:

1) Read through each section before using the materials.

2) Use the chart that outlines where to begin training to screen the student's current levels of performance and to decide where to begin training.

3) Follow the process outlined on the assessment sequence to identify the specific problem.

4) Refer to the Alternate Strategy section to identify any strategies that might be effective.

5) Refer to the Instructional Strategy section of the module to select training techniques.

6) Develop and write the instructional objective.

7) Collect, interpret, and make programming decisions on the basis of child-performance data.

The following sections of this manual visually diagram the problem-oriented approach when applied to teaching self-care skills of self-feeding, dressing, and toileting. Each section of the manual includes the following areas:

ESSENTIAL PREREQUISITE SKILLS
TRAINING SEQUENCES
FINDING THE SOLUTION FOR INDIVIDUAL PROBLEMS THROUGH ASSESSMENT

The training sequences outlined for teaching self-feeding, dressing, and toileting are those that would be most applicable when the student has motor dysfunction. Other training sequences might be more efficient for students without movement disorders. A listing of resources for obtaining materials that include other training sequences is provided at the end of each section of this manual as are references for articles which have been published on self-feeding, dressing, and toileting instruction with severely handicapped persons.

FINDING THE TRAINING SOLUTION:
SELF-FEEDING

FINDING THE TRAINING SOLUTION: SELF-FEEDING

Deciding when to teach a severely handicapped student self-feeding skills is, at best, a compromise. Teaching the student to self-feed any make achievement of oral-motor eating skills more complex -- or impossible -- when the student has difficulty with chewing or swallowing or other movement coordinations of the oral-motor musculature. Simply teaching a student too many skills at one time may hinder the final acquisition or severely prolong the necessary training time. On the other hand, some students may never acquire fully normal coordination of the oral-motor musculature for either eating or speech.

The decision to begin self-feeding must be made on an individual basis rather than from "rules" governing developmental milestone skills. Improved oral-motor coordination may be compromised for independence in eating or for the self-satisfaction of being in control of the environment. Severely handicapped students often have limited reinforcement hierarchies (see Bricker and Campbell, 1982b) and oftentimes, foods may be the only known consequence that increases behavior. Therefore, for some severely handicapped students, teaching independent self-feeding may become important as a demonstration of learning. In fact, the skill of self-feeding may be the only situation in which a teacher can construct an instructional activity that represents primary movement (Campbell, in press). Traditionally, self-feeding has been viewed as a skill representative of the self-care domain of behavior. However, when the same skill is viewed within the context of overall theories of child development (e.g., Piaget, 1952) or of learning theory, self-feeding becomes a functional representation of a primary circular reaction (Piaget, 1952; Robinson & Robinson, 1978). In other words, self-feeding is a situation in which an increase in rate of movement (hand-to-mouth) is increased as a function of the consequences (food) of that response. The hand-to-mouth movement pattern is under the control of the reinforcer (food).

This broader perspective to self-feeding provides information that can help the teacher, therapist, or parent establish a functional training program for a severely handicapped student. The immediate implications are, hopefully, apparent: self-feeding cannot be taught unless the food used is a reinforcing consequence for the student. Trying to train self-feeding using any foods or typical foods will not be as effective as training spoon, fork, and cup skills using foods and liquids that are clearly preferred by the student. The response pattern, fully established with a preferred food, can then be generalized to less preferred foods far more easily than that same response can be established under conditions of weak reinforcement (or "punisher").

Basic areas of self-feeding are listed below. However, these areas represent only the key or essential areas of independence in eating. Additional areas of instruction will need to be taught for full independence at mealtime. Getting food independently from the cafeteria line in school or at work as well as returning items to the trash and

dishwasher line are also important. An individual who is not independent with opening schemes will be dependent on another person to open containers before being able to use self-feeding skills. Meal set up, preparation (cooking), dishwashing, ordering and obtaining food in a restaurant are additional skills representative of community living and domestic skills that must be taught to severely handicapped students for full independence regarding all aspects of eating. The information in this module deals specifically with training of eating and drinking skills required for independent eating. However, references at the end of this section may be useful resources for teaching all skills required for full independence at mealtimes.

AREAS OF SELF-FEEDING

Fully independent self-feeding requires the acquisition of competency in the following areas:

Finger Feeding
Spoon Feeding
Cup Drinking
Use of a Fork
Straw Drinking
Use of a Knife

Some severely handicapped students may only acquire competence in one or more of these self-feeding areas. Few students with severe motor handicaps will learn to manage a knife properly. However, if the child learns some independent eating skills and some independent drinking skills, skills to feed himself should be adequate for eating with minimal supervision.

TRAINING SEQUENCES

SELF-FEEDING

COMPETENCY-BASED TRAINING SEQUENCE	NORMAL SEQUENCE OF DEVELOPMENT
Spoon Feeding	Finger Feeding (9-12M.)
Cup/Straw Drinking	Spoon Feeding (12M.)
Use of Fork	Cup Drinking (18M.)
Finger Feeding	Use of Fork (42M.)
Use of Knife	Straw Drinking (48M.)
	Use of Knife (60M.)

SPOON FEEDING

Training Outcome

The child picks up the spoon, scoops food onto spoon, places the filled spoon in his mouth, and replaces the spoon in the dish without physical guidance from an adult.

Sequence of Steps

The child places the filled spoon in his mouth using proper arm and lip movements.

The child scoops the food onto the spoon.

The child removes the spoon from his mouth and places it back in the dish.

The child holds the spoon.

The child picks up the spoon.

The child releases the spoon.

DRINKING

Training Outcome

The child picks up the cup, lifts it to his mouth, drinks, and replaces the cup on the table without physical guidance from an adult.

Sequence of Steps

The child drinks from cup held to lips.

The child lifts the cup to his lips.

The child removes the cup from his mouth and places it back on the table

The child holds the cup.

The child picks up the cup.

The child releases the cup.

ESSENTIAL PREREQUISITE SKILLS

Certain prerequisite skills are necessary for each area of eating and drinking. These GENERAL PREREQUISITES include:

***The student must be able to be positioned in such a manner that he is able to move one arm.

***The student must be able to initiate movement of his hand to his mouth. He can demonstrate a hand to mouth pattern with physical prompting, adaptive equipment, or independently.

***Preferences for particular types or kinds of food/liquids must be able to be identified by parents, teachers, therapists, child care aides, or others who know the student.

REPRESENTING TRAINING OBJECTIVES FOR UTENSIL USE

Assume that the student whom you are evaluating is able to place the filled spoon in his mouth using appropriate lip and arm movements but is unable to pick up the spoon. You assess the child's abilities to pick up spoons of various sizes and shapes and determine that the student lacks the grasp to pick up the spoon. Your "working hypothesis" is that the child lacks the necessary grasp and that this is interfering with his ability to progress in self-feeding using a spoon. A possible solution to that difficulty would be to try an alternate intervention strategy of an adaptive spoon. The spoon which you try has a large handle which the child is able to grasp. The intervention strategy, an adaptive spoon, is effective.

ACHIEVABLE GOAL: The student will independently spoon feed during mealtimes using an adaptive spoon.

If this same student were approached from a developmental or deficit approach, an alternate intervention strategy would most likely not be employed. In this instance the "working hypothesis" might be that the student lacks palmar grasp. The intervention strategy would be designed to teach the child how to grasp objects using a palmar grasp.

ACHIEVABLE GOAL: DEVELOPMENTAL/DEFICIT MODEL The student will grasp appropriate sized objects using a palmar grasp.

REPRESENTING TRAINING OBJECTIVES FOR INDEPENDENT DRINKING

A student in your classroom seems able to drink from a cup but does not put the cup down on the table when he is through drinking. Your assessment shows that the child is able to put other objects down using a controlled release pattern but, when drinking, he drops the cup after he is finished. Your "working hypothesis" is that the child has the necessary physical control to put the cup down when drinking is completed. Physical guidance is selected as a technique and is effective in assisting the child to place the cup on the table. Fading guidance to a cue of pointing to the table is attempted, but the physical cue without a guidance does not prevent the throwing or evoke the behavior of placing the cup on the table after drinking.

ACHIEVABLE GOAL:
PROBLEM-ORIENTED MODEL

The student will place the cup on the table with verbal direction and cue of pointing to the table where the cup should be placed.

In approaching this same situation from a developmental or deficit framework, the "working hypothesis" might be that the child lacks controlled release. The intervention strategy would be designed to develop fine motor skills of controlled release of objects.

ACHIEVABLE GOAL:
DEVELOPMENTAL/DEFICIT MODEL

The student will consistently demonstrate controlled release of objects by placing them correctly on the table.

TRAINING IN SELF-FEEDING

DETERMINING PRE-REQUISITE SKILLS:

The child can be positioned so that he is able to move one arm
— no → Determine working hypothesis for why child can't be positioned

yes ↓

Known preferences for spoon foods or liquids have been identified
— no → Determine a hierarchy of preferred foods and/or liquids

yes ↓

The child is able to initiate movement of hand away from mouth (pattern of arm extension at the elbow from flexed position)
BEGIN WITH SPOON FEEDING
— no → Determine working hypothesis for why child can't move his hand to his mouth

yes ↓

DETERMINING WHERE TO BEGIN TRAINING:

The child is able to hold an object while flexing and/or extending the arm at the elbow (pattern of flexed fingers with wrist extension, flexion and extension at elbow)
BEGIN WITH SPOON FEEDING AND/OR CUP DRINKING
— no → Determine working hypothesis for why child can't hold an object and move arm

yes ↓

The child is able to hold a small object while flexing and/or extending the arm at the elbow (pattern of thumb/index finger control with wrist extension, flexion and extension at the elbow)
BEGIN WITH FINGER FEEDING
— no → Determine working hypothesis for why child can't hold small object and move arm

yes ↓

The child is able to hold an object, use the object in relation to a surface (i.e. bang), and flex/extend the elbow (pattern of flexed fingers, pressure of surface through elbow, wrist, or shoulder movement, wrist extension, and flexion and extension at the elbow)
BEGIN USE WITH FORK
— no → Determine working hypothesis for why child can't demonstrate flexion/extension pattern with object holding and movement of object on surface

yes ↓

The child can demonstrate object holding with wrist movement and elbow flexion, and shoulder movements which moves object against a surface (pattern of flexed fingers, wrist flexion/extension, stable elbow, scapular protraction/retraction as one example)
BEGIN WITH USE OF KNIFE
— no → Determine working hypothesis for why child can't perform a movement pattern to move object in relation to surface

↓

PERFORM DETAILED ANALYSIS OF COMPETENCIES IN THE SELECTED SKILL AREA

FINDING THE SOLUTIONS FOR INDIVIDUAL PROBLEMS IN SELF-FEEDING

PROBLEM: THE CHILD DOES NOT SPOON FEED INDEPENDENTLY

THE CHILD DOES NOT PLACE A FILLED SPOON IN HIS MOUTH

PREPARATION

The child demonstrates prerequisite skills of arm movement and has known preferred foods

ASSESSMENT STRATEGY

Use foods which stick to the spoon such as pudding, applesauce, and which are known preferred foods - i.e., favorite foods

1) Place the spoon with the food on it in the child's hand.
2) If the child does not put the spoon in his mouth, physically guide his arm through the movement to his mouth so that he obtains the food on the spoon.
3) Place the spoon in the child's hand for the second time, following steps 1) and 2).
4) Place the spoon in the child's hand for the third time but if the child does not put the spoon in his mouth, DO NOT physically guide his arm; give the child 10 opportunities.
5) Mark down how many times (out of 10 opportunities) that the child: puts the spoon in his mouth independently; attempts but is not successful; and does not put the spoon in his mouth. The step is your BASELINE MEASUREMENT.
6) If the child is sometimes successful and sometimes not successful (for instance, 5 times in the mouth/5 times not in the mouth), repeat steps 4) and 5) two additional sessions. Mark down information and summarize in some way (graph) for observation step.

OBSERVATION

The child does not place the spoon in his mouth or performs the activity poorly

The child places the spoon in his mouth using proper arm and lip movements

INTERPRETATION

DIFFICULTY	POSSIBLE SOLUTIONS
Does not seem to understand what is required	Demonstration Physical Guidance Verbal Direction
Can perform part of the activity but is unable to complete the entire movement sequence	Shaping Backward Chaining Specify Required Conditions
Is unable to sustain grasp on spoon	Adapted spoon for grasp Physical Guidance
Has difficulty getting spoon in mouth	Adapted Spoon Physical Guidance
Has difficulty getting food from spoon into mouth	Further Evaluate Oral-Motor Competencies
Moves spoon to mouth but arm movement pattern is abnormal	Consult with physical or occupational therapist to receive instructions to facilitate more normal pattern. Movement should be with normal tone, shoulder in neutral position, arm forward flexed, flexion/extension of elbow.

THE CHILD DOES NOT SCOOP FOOD ONTO THE SPOON

ASSESSMENT STRATEGY

Use easily scoopable foods which stick easily to the spoon such as applesauce, pudding, etc. which are known preferred foods.

1) Position the dish in front of the child with the spoon in the dish and the child's hand grasping the spoon.
2) If the child does not scoop the food, physically guide him in the scooping movement but have the child put own spoon in mouth.
3) Position the dish and spoon in front of the child for a second time following steps 1 and 2.
4) Reposition the dish and spoon with child's hand grasping the spoon. If the child does not scoop, DO NOT guide him. Give the child 10 opportunities to scoop the food by himself. Carefully observe what the child does even if he is not successful in scooping.
5) Mark down how many times (out of 10 opportunities) that the child: scoops appropriately; attempts but is not successful; and does not scoop. This is your baseline for scooping.
6) If the child is sometimes successful and sometimes not successful, repeat steps 4 and 5 for two additional session. Mark down information and summarize for observation step.

OBSERVATION

The child does not scoop the food onto the spoon

The child scoops the food onto the spoon using appropriate arm movements

INTERPRETATION

DIFFICULTY	POSSIBLE SOLUTIONS
Does not seem to understand what is required	Demonstration Physical Guidance
Attempts to scoop but does not get food on the spoon	Adapted Dish Vary Food Texture
Can perform part of the activity but is unable to complete the entire sequence	Shaping Backward Chaining Specificy Required Conditions
Can scoop but has difficulty doing so consistently	Dish Placement Adapted Dish

THE CHILD DOES NOT REPLACE THE SPOON IN THE DISH

ASSESSMENT STRATEGY

Use a full spoon

1) Place the spoon in the child's mouth (or have him do this step himself) with child's hand on the spoon.
2) Leave the spoon in his mouth.
3) If the child does not remove the spoon and place it in the dish, physically guide him in removing and replacing the spoon.
4) Perform steps 1-3 for second time.
5) Repeat the sequence but if the child does not remove the spoon, DO NOT guide the movement. Wait 10 seconds and if the child does not remove the spoon, remove it from his mouth and start again. Give 10 opportunities, observing the child's response each time.
6) Indicate how many times (out of 10 opportunities) that the child is successful. This is your baseline.
7) Repeat activity for two additional sessions to use as basis for observation step.

OBSERVATION

The child does not replace the spoon in the dish

The child replaces the spoon in the dish using appropriate release patterns

INTERPRETATION

DIFFICULTY	POSSIBLE SOLUTIONS
Does not seem to understand what is required	Demonstration Physical Guidance Verbal Directon
Removes the spoon from his mouth but does not replace in the dish	Physical Guidance Shaping
Releases spoon by throwing	Physical Guidance Specify Required Conditions Adapted Spoon
Puts spoon down but does not replace in the dish	Shaping

THE CHILD DOES NOT HOLD THE SPOON

ASSESSMENT STRATEGY

Use several types of spoons to determine the most easily grasped utensil. Consult with occupational therapist for alternatives. Do not use an adaptive spoon that fastens to the hand.

1) Place the spoon (with a favorite food) near the child's hand and/or in a dish placed in front of the child.
2) Ask the child to hold the spoon (and/or put the spoon in his mouth).
3) Guide movement (reach) to spoon if necessary. Provide at least 10 opportunities to hold the spoon. Mark down how many times the child is successful.
4) Repeat steps 1-3 for two additional sessions. Mark down information and summarize for baseline measurement.

OBSERVATION

The child does not hold spoon and/or does not sustain grasp for sufficient length of time.

The child maintains grasp on spoon for time period sufficient to bring spoon to mouth and back to dish.

INTERPRETATION

DIFFICULTY	POSSIBLE SOLUTIONS
Can perform part of the sequence but is unable to complete total sequence	Chaining Equipment revision
Can hold spoon but cannot move arm and simultaneously maintain grasp	Consult with therapist to evaluate patterns of disassociation and determine more effective positioning.
Can hold spoon and move arm but arm movement is abnormal	Reposition. Determine strategies for maintaining tone normalization.
"Drops" spoon at any time - i.e., fingers extend	Check wrist position to insure neutral position (and not flexed or flexed/deviated position). Consult with therpist to determine possible weakness in finger flexor muscles (and recommendations). Consult with therapist to determine any possible sensory deficits (and recommendations).

THE CHILD DOES NOT PICK UP/RELEASE THE SPOON

ASSESSMENT STRATEGY

Use several types of spoons to determine the most easily grasped and released utensil. Try alternate positions of utensil/food to identify the most efficient placement.

1) Place the spoon (with a favorite food) near the child's hand and/or in a dish placed in front of the child. Do not physically guide reaching movement.
2) Provide at least 10 opportunities to reach for the spoon, grasp utensil and put utensil down. Mark down how many times the child is successful (grasp and release).
3) Repeat steps 1 and 2 for two additional sessions. Mark down information and summarize for baseline measurement.

OBSERVATION

The child does not reach toward the spoon, pick up and release the utensil, and/or does so with inefficient movement patterns.

The child reaches for, picks up, and releases the utensil.

THE CHILD IS INDEPENDENT IN EATING.

INTERPRETATION	DIFFICULTY	POSSIBLE SOLUTIONS
		For any of the following difficulties, an occupational or physical therapist can provide specific individualized solutions.
	Arm musculature becomes tighter on attempted forward reach	Change position or implement procedures to normalize tone. Change reinforcer. Physical guidance.
	Arm moves backward (shoulder retraction) before forward flexion (reach)	Change position to provide more stable base for shoulders and/or to implement procedures to normalize tone and inhibit shoulder retraction.
	Fairly extended range of motion of the arm does not occur	Check shoulder movement to insure normal position and not protraction (forward movement), elevation or scapular rotation. Check for passive range of motion limitations.
	"Substitution" of trunk movement (lateral/sideways or forward flexion) occurs rather than only arm movement	Check pelvic position and trunk support to insure stable base for arm movement. Check for disassociation of arm/trunk movement and inhibit if present.
	Arm movement is uncontrolled and/or poorly coordinated	Facilitate at shoulder to provide stability for movement.
	Arm movement occurs with flexed hand making grasp of spoon difficult and/or impossible	Normalize tone and facilitate more external rotation/abduction at shoulder with neutral position of forearm. Physical guidance.
	Fingers can be extended only with stabilization of the wrist against a surface for pick up and release. Grasp of spoon produces flexion of the total arm.	Disassociate finger and wrist movement through physical guidance for wrist stability and/or splint. Disassociate finger and wrist movement as above. Facilitate abducted, externally rotated position of shoulder to inhibit flexion/protraction of shoulder.
	Spoon is "released" in uncontrolled way	See "Holds Spoon" section.
	Spoon is released only with extension of the wrist and elbow	Check shoulder position (as above). Normalize tone. Disassociate finger movement from wrist/elbow/shoulder movement.

FINDING THE SOLUTIONS FOR INDIVIDUAL PROBLEMS IN DRINKING

PROBLEM: THE CHILD DOES NOT DRINK INDEPENDENTLY

The movement patterns required to drink independently from a cup are basically the same as those required for self-feeding. Refer to the self-feeding assessment charts for interpretation of difficulties with independent drinking.

THE CHILD DOES NOT LIFT THE CUP TO HIS LIPS

PREPARATION

The child demonstrates ability to orally take liquid from a cup placed between the lips, shows preference for specific liquids, and demonstrates arm movement.

ASSESSMENT STRATEGY

Use a small, easily grasped cup (with or without handle(s) that contains one to two sips of preferred liquid.

1) Place the cup in the child's hand(s). Provide guidance to grasp and maintain grasp, if necessary, but guide hand to mouth pattern for 1-2 times to mouth only.
2) After guiding only 1-2 hand to mouth movement cycles, ask child to drink from cup.
3) Refill cup with small amounts of liquid until child has had 10 opportunities to drink independently.
4) Mark down performance for each attempt -- performed correctly, partially correctly, or incorrectly.
5) Present cup for 10 opportunities for two additional sessions.
6) Summarize data to define extent to which child drinks from cup using hand to mouth movement pattern.

OBSERVATION

The child does not bring cup to mouth independently

The child brings cup to mouth independently

INTERPRETATION

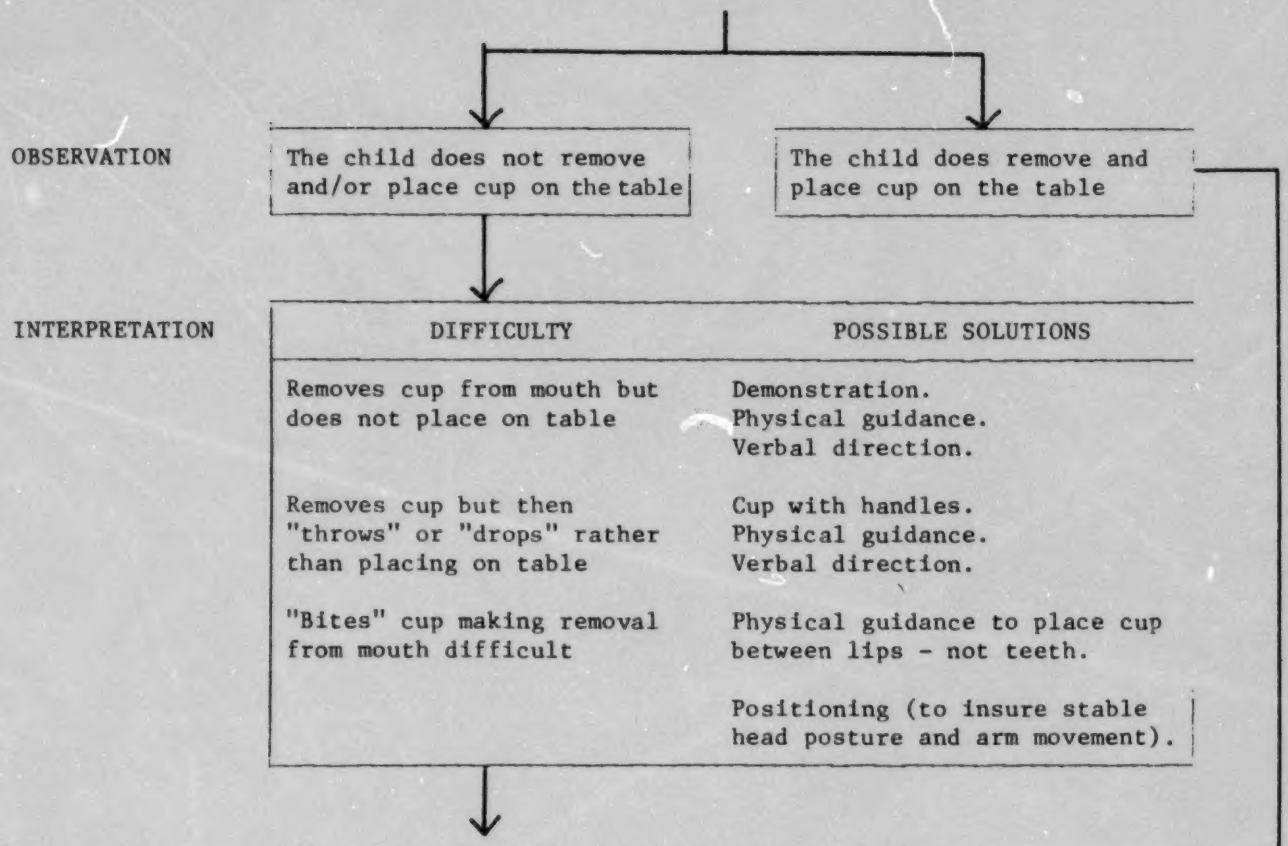
DIFFICULTY	POSSIBLE SOLUTIONS
Liquid is not taken from cup with coordinated oral-motor patterns	Check oral-motor skills. Consult speech therapist or occupational therapist.
Is unable to maintain grasp on cup for whole sequence	Try different types of cups (with handles, etc.). Physical guidance for grasp. See Grasp section.
Bites cup and "loses" grasp with hand.	Check oral-motor skills. Consult with speech therapist or occupational therapist.
Spills liquid while moving cup to mouth	Put less liquid in cup. Physical guidance.
Gets cup to mouth but arm movement pattern is abnormal and/or compensatory movements with the trunk are used	Consult with physical therapist/ occupational therapist to receive guidance on facilitation procedures for more normal pattern. Position/equipment revision.

THE CHILD DOES NOT REMOVE THE CUP FROM HIS MOUTH AND PLACE IT BACK ON THE TABLE

ASSESSMENT STRATEGY

Use a small, easily grasped cup that contains 1-2 sips of preferred liquid.

1) Place the cup in the child's mouth (or have him do this step by himself). Use physical guidance for grasp on cup.
2) Leave the cup in the child's mouth.
3) If the child does not remove the cup, guide the movement to put cup on table.
4) Perform steps 1-3 for second time.
5) Repeat the sequence for 10 opportunities but DO NOT guide the movement. Repeat activity for two additional days.
6) Summarize data to define extent to which child places cup on table.


OBSERVATION
The child does not remove and/or place cup on the table
The child does remove and place cup on the table
INTERPRETATION
DIFFICULTY
POSSIBLE SOLUTIONS
Removes cup from mouth but does not place on table
Demonstration.
Physical guidance.
Verbal direction.
Removes cup but then "throws" or "drops" rather than placing on table
Cup with handles.
Physical guidance.
Verbal direction.
"Bites" cup making removal from mouth difficult
Physical guidance to place cup between lips - not teeth.
Positioning (to insure stable head posture and arm movement).
THE CHILD DOES NOT HOLD THE CUP
THE CHILD DOES NOT PICK UP/RELEASE CUP

For each of these problems, follow the assessment charts for holding, picking up, and releasing the spoon. The movement patterns required for successful performance are basically the same for both spoon feeding (palmar grasp) and cup drinking -- although the manual grasps of either utensil or cup will vary somewhat dependent on the type (configuration) of the object.

INSTRUCTIONAL STRATEGIES IN UTENSIL USE

DETERMINING WHAT TO TEACH:

SPECIFIED TARGET BEHAVIOR
SPECIFIC PROBLEM IDENTIFICATION

Use the flow-charts in self-feeding assessment to determine the desired response and to identify behavior that is interfering with skill acquisition.

Determine appropriate alternate strategies to compensate for movement limitations.

DETERMINING HOW TO TEACH:

DETERMINE POTENTIALLY REINFORCING CONTRIVED AND NATURAL REINFORCERS

The natural reinforcer in self-feeding is the food which the student will feed to himself. Determine those types of food which seem preferred and use those foods in initial training.

If a child does not seem to have particular food likes or dislikes, determine a contrived reinforcer which will be effective in self-feeding. Systematic praise, hugs, or allowing a child to play with a particular toy during feeding are examples. Contrived reinforcers may not be necessary if the student enjoys lots of types of food.

DETERMINE ANTECEDENT ARRANGEMENTS

Use the guidance sequence (page _) to determine the number of antecedents necessary for the student to demonstrate the specified behavior.

INSTRUCTIONAL PROGRAM

Develop the written objective that specifies antecedent and consequent events and expected behavioral response. Flow-charts are often helpful in outlining the instructional program.

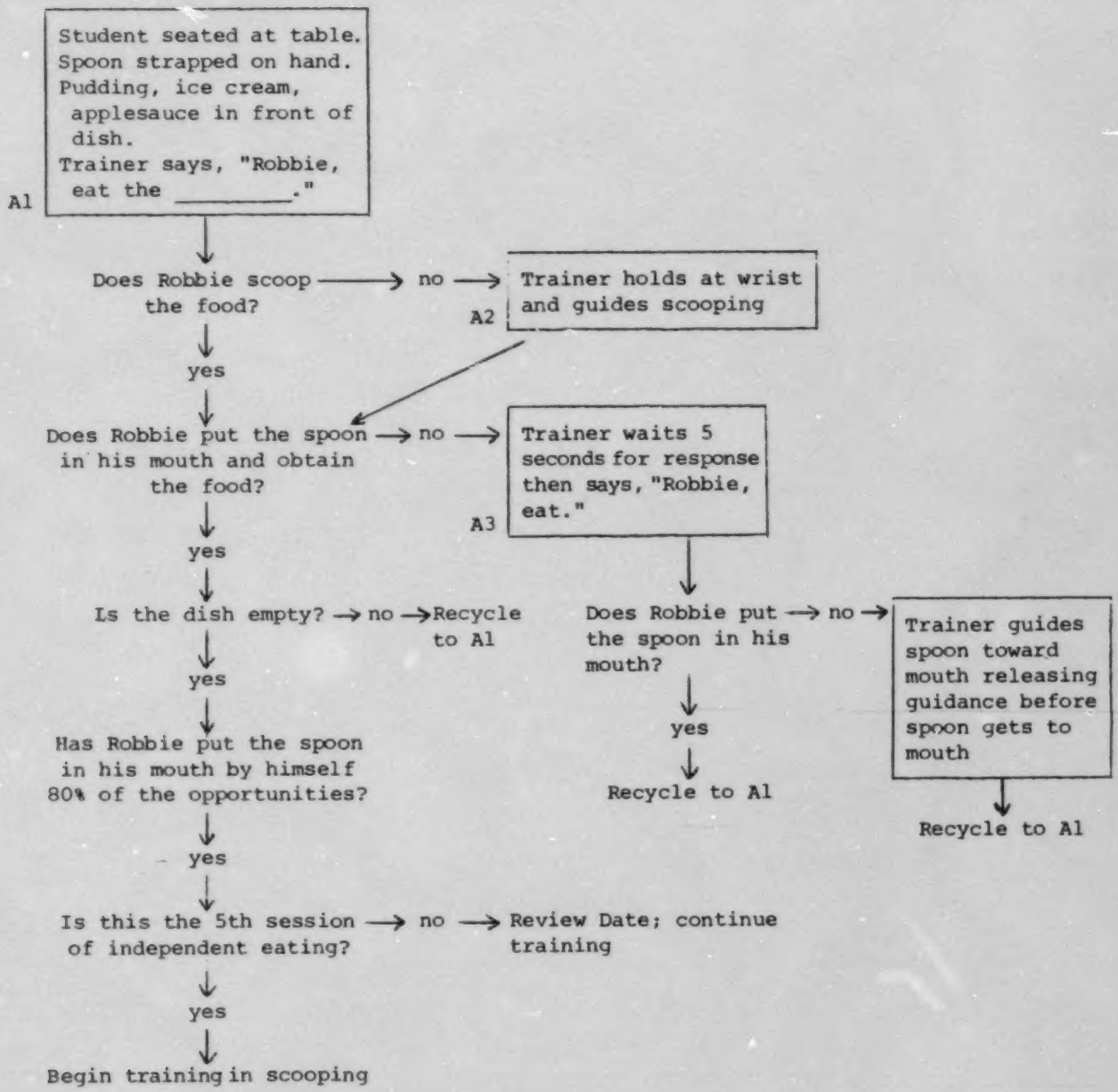
IMPLEMENTATION OF INSTRUCTIONAL STRATEGIES

Robbie is an eight year old child who attends school daily in a class for severely handicapped students. Although he is not yet walking independently, he is able to crawl well around the classroom. He gestures some wants but generally is non-verbal. He is dependent in all self-care skills. Observation of Robbie in his classroom identified the following inappropriate behavior: hitting self in head; banging head on the wall; teeth grinding; mouthing of all objects. The area of self-feeding was identified as a priority target area.

SPECIFIED TARGET BEHAVIOR SPECIFIC PROBLEM IDENTIFICATION	Use of the self-feeding flow chart indicated presence of hand to mouth pattern, but inablity to grasp spoon. TARGET: Robbie will put the spoon in his mouth when an adapted spoon which straps the spoon to his hand is used.
POTENTIALLY REINFORCING CONTRIVED AND NATURAL REINFORCERS	Natural Reinforcers in Feeding Situation: Pudding, ice cream, applesauce. Contrived Reinforcers: sips of juice; sips of coke; hugging.
Expansion of Reinforcers:	Natural: sweet foods with consistent texture -- try different flavors of pudding and jello; junket. Contrived: sweet liquids -- try different soft drinks, juices, milkshakes.
ANTECEDENT ARRANGEMENTS	Physical guidance used for scooping foods. Action of food scooping is antecedent event for putting spoon in mouth.
INSTRUCTIONAL PROGRAM	Use Adapted Spoon. Use Physical Guidance to scoop food. Robbie puts spoon in mouth. (Food itself is reinforcement.)

INDIVIDUAL INSTRUCTIONAL FLOW CHART:

SELF-FEEDING


A1
Student seated at table. Spoon strapped on hand. Pudding, ice cream, applesauce in front of dish. Trainer says, "Robbie, eat the _____."
Does Robbie scoop the food?
no
A2
Trainer holds at wrist and guides scooping
yes
Does Robbie put the spoon in his mouth and obtain the food?
no
A3
Trainer waits 5 seconds for response then says, "Robbie, eat."
yes
Is the dish empty?
no
Recycle to A1
yes
Has Robbie put the spoon in his mouth by himself 80% of the opportunities?
yes
Is this the 5th session of independent eating?
no
Review Date; continue training
yes
Begin training in scooping
Does Robbie put the spoon in his mouth?
no
Trainer guides spoon toward mouth releasing guidance before spoon gets to mouth
yes
Recycle to A1
Recycle to A1

FEEDING

Child's Name: Robbie Date: November 17, 1982

Trainer: PHC

Trial	Scoop	Spoon to Mouth
1	G	G-
2	G	+
3	+	+
4	G	-
5	G	+
6	G-	+
7	+	G-
8	+	+
9	G-	+
10	G-	G-
11	G-	+
12	G-	G-
13	G-	G-
14	G-	+
15		
16		
17		
18		
19		
20		

+ = independent

- = incorrect

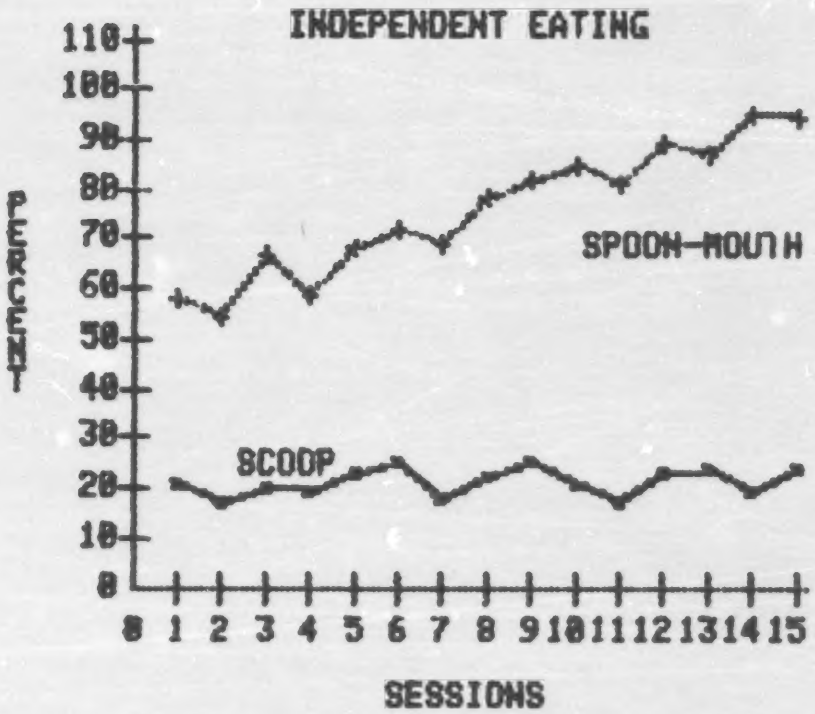
NR = no response

G = guided

Total Trials 14

Total + Scoop 3

Total + Spoon to Mouth 8

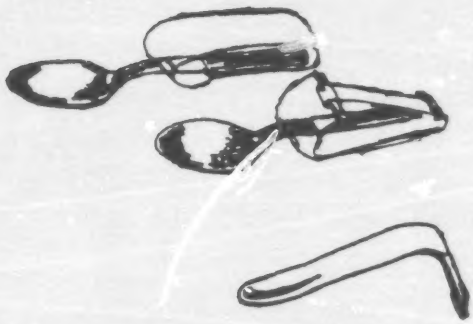

INDEPENDENT EATING
110
100
90
80
70
60
50
40
30
20
10
0
PERCENT
SPOON-MOUTH
SCOOP
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
SESSIONS

41

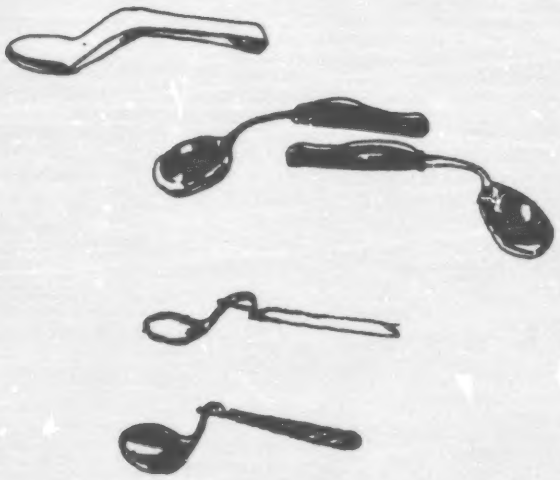
ADAPTED SPOONS

CYLINDRICAL FOAM PADDING (Available from Fred Sammons): Any spoon can be inserted into the foam to provide a larger handle to grip; is good for children who have difficulty with fine grasp; also prevents spoon from turning as child puts it in his mouth.
ALTERNATIVES: Wrap foam rubber around the spoon and secure with masking tape. Purchase an inexpensive ice tea spoon and bend the handle to "go around" the child's hand.

UTENSIL HOLDERS (Available from Fred Sammons, CLEO and others): Holder consists of a pocket into which the spoon is inserted and a strap which secures the spoon to the child's hand. Is good for child with limited or "no grasp" or for child who has difficulty maintaining grasp.
ALTERNATIVES: Purchase an inexpensive ice tea spoon and bend the handle to "go around" the child's hand. Tape a piece of elastic to the spoon to make a "strap" to secure the spoon to the child's hand. Sew a similar utensil holder from elastic webbing or plstic - use Velcro for strap.



BENT HANDLE SPOONS (Available from Fred Sammons, CLEO and others in right-handed and left-handed models): Spoon enables child with difficulty "hitting his mouth" to be more successful in getting the spoon in his mouth.
ALTERNATIVES: Bend teaspoon (or the child's feeding spoon) to get the same effect - can then be combined with padded handle or with utensil holder. Similar versions can also often be purchased in infant departments of discount, grocery, and department stores.



SWIVEL SPOONS (Flat handled swivel spoons available from CLEO): Spoon "swivels" so that the bowl of the spoon is always level. Is good for child who has difficulty with the spoon turning or who has abnormal movement patterns in the upper extremities. Other types of swivel spoons are commercially available. However, most of these spoons are not level with the spoon, requiring the child to "compensate" in order to get the spoon in his mouth.

PLASTISOL COATED SPOONS (Available from Fred Sammons, CLEO, and others): Plastic coated spoons are useful for children who have oral-coordination difficulties - who have difficulty with mouth opening and closing, who have tendencies to bite the spoon or to hit the spoon against the teeth. Can be used in combination with the padded handle or with the utensil holder. Similar spoons are available for infants at local discount and department stores.

ADAPTED FORKS

FLAT HANDLED SWIVEL FORK (Available from CLEO): Fork is appropriate for children who can safely manage a fork but who have difficulty with the fork turning. As with the swivel spoon, the fork remains level through the swivel mechanism.

TRAINING DEVICES

A number of specific devices exist for assisting in training handicapped people to eat with better coordination and/or to compensate for lack of movement or range of motion in the upper extremities. Two devices that are currently commercially available are illustrated. Check current rehabilitation device catalogues to find other devices that might be helpful when training a motor-impaired student to learn to self-feed.

MISCELLANEOUS ADAPTIVE EQUIPMENT

SCOOP DISHES (Available from Fred Sammons, CLEO, and others): There are many types of dishes available. However, these seem to work best for children who have difficulty either with scooping the food or with getting the spoon properly positioned in the dish. The dish is designed so that a person with limited range of arm movement can successfully scoop the food.

ALTERNATIVES: Plate guards -- also available commercially -- provide a "lip" for the plate. A small, shallow bowl is difficult for many children but some can manage with a deep bowl -- such as a cereal bowl.

CUPS: Adequate cups are available locally in infant departments. SPOUT CUPS are NOT suggested for most children. The spout makes drinking passive, allows the child to "bite" when drinking, and encourages loss of liquids from the sides of the mouth.

WEIGHTED BOTTOM CUPS (SUCH AS Tommy Tippy Cup) are good for children learning to put the cup down on the table. The weights in the cup bottom prevent the cup from tipping.

CUPS WITH LIDS are good for children who have difficulty with smooth arm movements or who throw the cup. Many infant cups come with lids which have slits for the liquid to flow through. An alternate for the child who does not need a handle on the cup is to use TUPPERWARE juice or milk glasses which come with lids to them.

STRAWS: Long straws in various diameters are available from most rehabilitation catalogues. Aquarium tubing is an inexpensive substitute. Regular plastic straws that bend are best for most children who need to use straws in order to obtain drinking independence.

STABILIZERS: DYCEM MATTING (Available from Fred Sammons, CLEO, and others): "Place Mats" can be made from the matting. Dishes placed on the surface will "stick" to the mat. This is helpful for children having difficulty with dishes moving -- particularly if the child is learning to scoop.

ALTERNATIVES: A damp towel will provide some stabilization. Locally available SOAP OCTOPUSES or other types of suction cups can be used to stabilize each dish, cup, etc.

USEFUL GUIDES IN TRAINING FEEDING

I. Pre-Requisite Feeding Skills:

Campbell, P. H. Problem oriented approaches to feeding the handicapped child. Akron, Ohio: Children's Hospital Medical Center of Akron, 1982.

Morris, Suzanne. Program Guidelines for Children with Feeding Problems. Deemer-Kiwanis Children's Division, Curative Workshop of Milwaukee: Mimeograph, 1974.

Mueller, Helen. Feeding. In N. Finie (Ed.). Handling the young cerebral palsied child at home. New York, New York: Dutton, 1975.

Smith, Mary Ann (ed.) Feeding the handicapped child. Memphis, Tenn.: Child Development Center, Department of Nutrition, University of Tennessee, 1969.

Sofka, D. Nutrition and feeding techniques for handicapped children (pamphlets). Sacramento, Califoria: Developmental Disabilities Program, California State Department of Health, no date.

II. Training in Self-Feeding Skills:

Azrin, N. H., & Armstrong, P. M. The "mini-meal" -- A method for teaching eating skills to the profoundly retarded. Mental Retardation, 1974, 11, 9-13.

Ball, T. S., Hendrickson, H., & Clayton, J. A special feeding technique for childhood regurgitation. American Journal of Mental Deficiency, 1974, 78, 486-493.

Barton, E. S., Guess, D., Garcia, E., & Baer, D. M. Improvement of retardates' mealtime behaviors by timeout procedures using multiple baseline techniques. Journal of Applied Behavior Analysis, 1970, 3, 77-84.

Blockley, J., & Miller, g. Feeding techniques with cerebral palsied children. Physiotherapy, 1971, 57, 300-308.

Bowman, M., & others. Eating with a Spoon (How to teach your multiplyhandicapped child.) Columbus, Ohio: Ohio Statle University Press, 1975.

Christian, W. P., & others. An attendant operated feeding program for severely and profoundly retarded females. Mental Retardation, 1973, 11, 35-37.

Groves, I. D., & Carroccio, D. F. A self-feeding program for the severely and profoundly retarded. Mental Retardation, 1971, 9, 10-12.

Holser-Buehler, P. Correction of infantile feeding habits. The American Journal of Occupational Therapy, 1973, 26, 331-335.

Leibowitz, J. M., & Holcer, P. Building and maintaining self-feeding skills in a retarded child. American Journal of Occupational Therapy, 28, 545-548.

Lemke, H., & Mitchell, R. D. A self-feeding program: Controlling the behavior of a profoundly retarded child. American Journal of Occupational Therapy, 1972, 25, 261-264.

O'Brien, F., & Azrin, N. H. Developing proper mealtime behaviors in the institutionalized retarded. Journal of Applied Behavior Analysis, 1972, 5, 389-399.

O'Brien, F., & others. Training and maintaining retarded child's proper eating. Journal of Applied Behavior Analysis, 5, 67-69.

Palmer, S., Thompson, R., & Linschied, T. Applied behavior analysis in the treatment of childhood feeding problems. Developmental Medicine and Child Neurology, 1975, 17, 333-339.

Perske, R., Clifton, A., McLean, B. M., & Stein, J. I. (Eds.), Mealtimes for severely and profoundly handicapped persons: New concepts and attitudes. University Park Press, 1977.

Snell, M. Self care skills. In M. Snell (Ed.), Systematic instruction of the moderately and severely handicapped. Columbus, Ohio: Charles E. Merrill, 1978.

FINDING THE TRAINING SOLUTION:
DRESSING

FINDING THE TRAINING SOLUTION: DRESSING

The total process of independently dressing and undressing oneself is a complex movement act, which, even with students with competence in motor control, requires years of practice before the entire sequence of movement skills required is well coordinated. Movement limitations or dysfunction can significantly interfere with a multihandicapped student's ability to dress and undress to such an extent that full and independent dressing may never be attainable. Getting clothing on and off without assistance is an important skill, but one that may not be critical for a severely motorically impaired individual. Modifications to clothing, as well as more effective clothing design, can enable full or partial independence far more easily than attempting to train the complex movement patterns required to manage all types of clothing. For instance, purchasing a bra without closings or one that fastens in the front (or not at all!!) can make an individual independent easier than trying to teach the movement patterns necessary to fasten a bra in the back.

Independent dressing/undressing skills are difficult to teach, not just because of the complex coordinated movements required, but also because of the lack of natural reinforcement for independence. Furthermore, significant amounts of practice through massed opportunities (or trials) may be necessary to train competence (e.g., Azrin & others, 1976). Therefore, training dressing/undressing as part of the natural routine (i.e., before swimming, in the morning/evening) may be insufficient. Furthermore, concepts such as front/back, up/down, etc., become significant in independent dressing. Gettting shoes on the feet is not functional unless the shoes are on the correct feet!

Full independence in clothing management is not attained simply through skill in getting clothing on and off appropriately. Other skills such as being able to locate clothing (in drawers/closet/coat rack) and replace it in the proper location are important. Selecting clothing is also required for fully independent dressing, including skills such as matching colors/patterns or selecting appropriate clothing for the activity to be engaged in. Knowing that clothing is dirty and requires laundering or drycleaning, as well as being able to use a laundromat (and its equipment) or get to the drycleaner, are additional skills, as are the simple sewing skills required for mending. All of these skills are necessary for clothing management independence required from most adults. However, the information in this section focuses only on independence in getting clothing onto and off of one's body. References included at the end of this section should assist the teacher, therapist, and parent to expand skill training to insure as fully independent clothing management skills as possible.

TRAINING SEQUENCES

DRESSING

COMPETENCY-BASED TRAINING SEQUENCE
Removes clothing requiring one motor action.
Completes part of clothing removal where one action is required (takes arms from sleeves).
Sequences two motor actions to remove one piece of clothing (pullover shirt).
Completes part of putting on clothing where one action is required (arms in sleeves, legs in pant legs).
Sequences two motor actions to put on one piece of clothing (pullover shirt).
Sequences more than two motor actions to put on one piece of clothing (pants with zipper).
Performs manipulation schemes necessary for fastenings.

NORMAL SEQUENCE OF DEVELOPMENT
Puts on hat, socks, mittens (18 months).
Removes shoes, socks, pants (24 months).
Removes most clothing (30 months).
Puts on shirt, coat (30 months).
Undresses well, including front buttons (36 months).
Dresses, undresses with little assistance except for fastenings (48 Months).
Dresses, undresses fully independently except for back fastenings, coat zippers, and shoe tying (60 months).

Training Outcome

The child fully removes and puts on all types of clothing without assistance.

Sequence of Steps

Clothing Removal

1) Removes hat, mittens, shoes (unlaced), socks (simple one action).
2) Takes arms from sleeves, legs from pant legs (one action).
3) Removes pants from knees (one action).
4) Takes arms from sleeves of pullover (one action sequence).
5) Totally removes pants (without zipper), pullover shirt, and front opening shirt (unbuttoned) (two action seqeunce).
6) Removes clothing - including managing fastenings (two or more action sequence plus manipulation).

Sequence of Steps (cont.)

Putting on Clothing

1) Puts arm into large armholes of frong opening garment, head into large neck, legs in pant legs (one action).
2) Pulls pants on (one action).
3) Puts on pullover, front fastening shirt/jacket (two action sequence).
4) Puts on clothing independently -- shoes, socks, pants, shirt, jacket -- but does not do fastening and may not be correct on front/back, right/left, etc. (two action sequence).
5) Puts on clothing including managing simple fastenings (two or more action sequence plus manipulation).

Fastenings

1) Velcro closings
2) Snaps
3) Large zippers
4) Unbuttons large front buttons
5) Unties shoes
6) Buttons large buttons
7) Undoes buckle
8) Laces shoes
9) Ties shoes

AREAS OF DRESSING

Total independence in managing clothing requires:

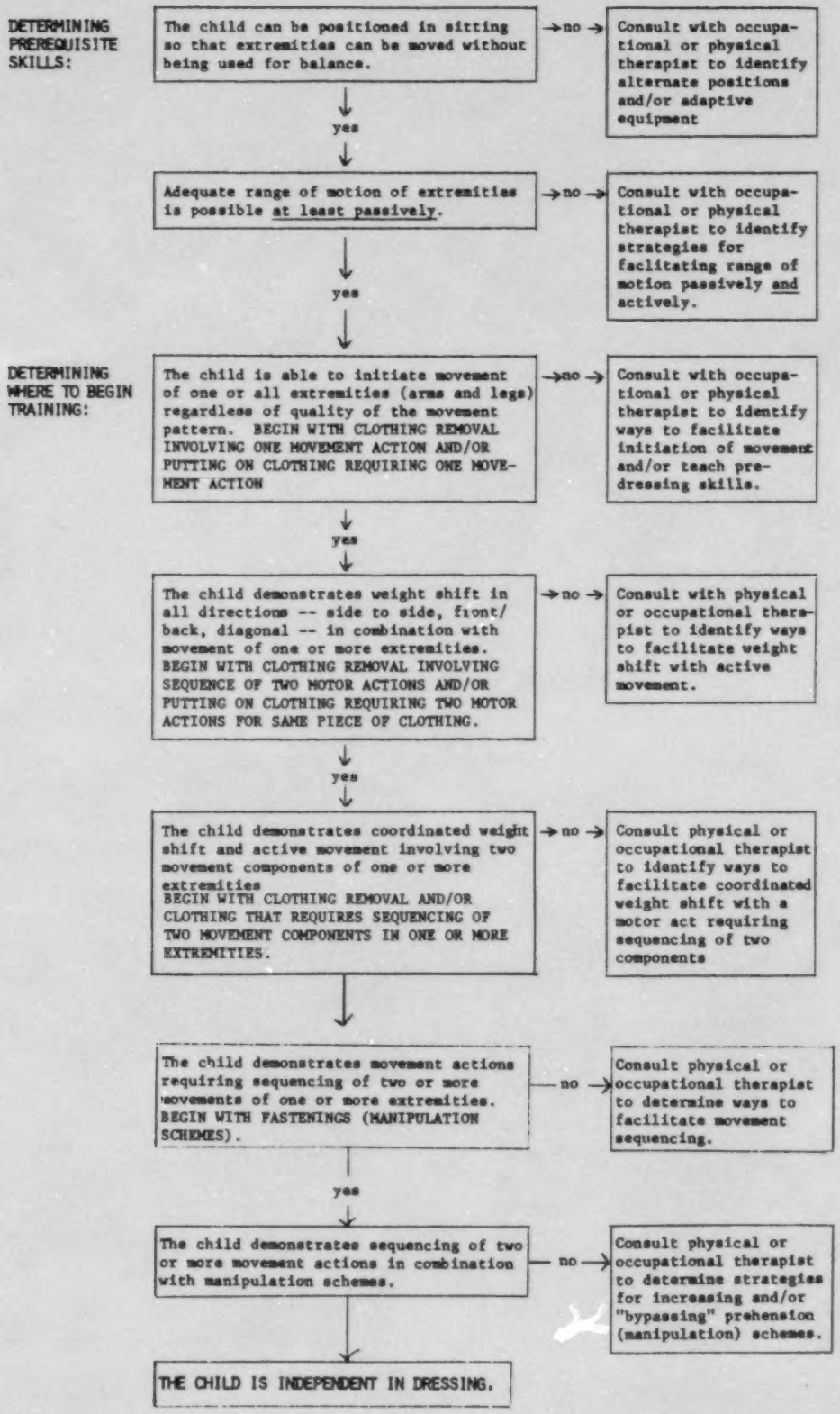
Undressing
Dressing
Management of Clothing Fastenings
Shoe Tying

ESSENTIAL PREREQUISITE SKILLS

***The student must have excellent balance in sitting. Balance must be adequate enough to allow the child to free both arms for use in dressing. (If he needs to prop with his arms to obtain balance in sitting, he will be unable to use both arms for dressing.) Adaptive equipment or proper positioning can provide the child with adequate balance for dressing.

***The student must have the ability to move his arms and legs with fairly normal ranges of movement.

TRAINING IN DRESSING


DETERMINING PREREQUISITE SKILLS:
The child can be positioned in sitting so that extremities can be moved without being used for balance.
no
Consult with occupational or physical therapist to identify alternate positions and/or adaptive equipment
yes
Adequate range of motion of extremities is possible at least passively.
no
Consult with occupational or physical therapist to identify strategies for faclitating range of motion passively and actively.
yes
DETERMINING WHERE TO BEGIN TRAINING:
The child is able to initiate movement of one or all extremities (arms and legs) regardless of quality of the movement pattern. BEGIN WITH CLOTHING REMOVAL INVOLVING ONE MOVEMENT ACTION AND/OR PUTTING ON CLOTHING REQUIRING ONE MOVEMENT ACTION
no
Consult with occupational or physical therapist to identify ways to facilitate initiation of movement and/or teach predressing skills.
yes
The child demonstrates weight shift in all directions -- side to side, front/back, diagonal -- in combination with movement of one or more extremities. BEGIN WITH CLOTHING REMOVAL INVOLVING SEQUENCE OF TWO MOTOR ACTIONS AND/OR PUTTING ON CLOTHING REQUIRING TWO MOTOR ACTIONS FOR SAME PIECE OF CLOTHING.
no
Consult with physical or occupational therapist to identify ways to facilitate weight shift with active movement.
yes
The child demonstrates coordinated weight shift and active movement involving two movement components of one or more extremities BEGIN WITH CLOTHING REMOVAL AND/OR CLOTHING THAT REQUIRES SEQUENCING OF TWO MOVEMENT COMPONENTS IN ONE OR MORE EXTREMITIES.
no
Consult physical or occupational therapist to identify ways to facilitate coordinated weight shift with a motor act requiring sequencing of two components
The child demonstrates movement actions requiring sequencing of two or more movements of one or more extremities. BEGIN WITH FASTENINGS (MANIPULATION SCHEMES).
no
Consult physical or occupational therapist to determine ways to facilitate movement sequencing.
yes
The child demonstrates sequencing of two or more movement actions in combination with manipulation schemes.
no
Consult physical or occupational therapist to determine strategies for increasing and/or "bypassing" prehension (manipulation) schemes.
THE CHILD IS INDEPENDENT IN DRESSING.

KEY PROBLEMS & SOLUTIONS IN DRESSING TRAINING

Many of the movement problems that make dressing difficult for children with physical handicaps occur across various types of dressing and undressing activities rather than are specific to a particular step in a dressing/undressing sequence.

The descriptive labels that will be used to define movement disorders that impede independence in dressing are defined below. One basic problem/solution chart is provided for potential difficulties that may occur when children learn to dress and undress themselves independently. In addition, therapists, teachers, and parents may have to perform analyses of specific movement components required to perform a given skill from a specified postion (posture) by an individual child.

Positioning: the posture in which the child will be most able to free arms and legs for movement components required in dressing AND including the adaptive equipment that might be necessary to insure arm/leg movements, e.g. sidelying, back lying, sitting, supported sitting, standing, or kneel-standing.

Postural Stability: the ability of the muscles to contract to provide "holding" in the proximal joints that allows achievement of balance in a given position without the use of the arms to maintain posture or the use of postural support equipment.

Balance: the ability to maintain posture selected for dressing/undressing training without using the arms for support to the trunk and without loosing upright postures.

Dissassociation of Movement: a differentiation of muscular responses such that hand movement is possible without total movement of the arm, arm movement without shoulder/trunk movement, etc.

Weight Shift: change in the distribution of body weight in relation to gravity as a means of providing postural stability (a component of balance) necessary for coordinated movement, e.g. shifting body weight from the front to the back of the pelvis when sitting in order to flex (bend) one leg toward the trunk to put a shoe on the foot.

Coordination: a sequencing of two or more movement components or actions to achieve an outcome, e.g. sequencing weight shift with leg movement in order to put on the shoe.

DIFFICULTY	POSSIBLE SOLUTION
Cannot "free" arms to use for clothing manipulation -- i.e. movements are close to the body and lack ROM	Change positioning Use adaptive equipment Modify clothing to require less coordination
Balance in the selected position is poor -- i.e. child falls over and/or uses arms for support	Change positioning to require less balance (e.g. prone, supine) and/or use adaptive equipment to provide balance
Postural stability is achieved through use of the proximal muscles in "fixes" that inhibit and/or limit free ROM of the extremities	Tone normalization Change positioning Provide more physical guidance (facilitation) of required movements
Movement of the arm or the leg also "causes" movement of the trunk with difficulty maintaining the required position/posture	Tone normalization Provide physical guidance (facilitation) proximally to stabilize the scapula (shoulder) area to allow free arm movement and/or the pelvis to allow free leg movements
Weight shifting movements of posture "cause" loss of balance	Provide physical guidance proximally to provide a more stable base of support for weight shift Grade "influences" of gravity through positioning, equipment.
Fine motor control/coordination is poor	Provide activities to develop differentiation of finger & thumb movements--e.g. practice clothing, etc. -- practiced in correct orientation

INDIVIDUALIZING DRESSING TRAINING

Performing an analysis of the components of movement required to demonstrate a particular skill or part of a skill, in essence, requires a task analysis of the response pattern required in the skill or part of a skill. This type of detailed task analysis is not required when a child does not have dysfunction or delay in movement.

The therapist, teacher, or parent who wishes to complete an analysis of a required response pattern in terms of required movement skills must first define the joints of the body where movement is required. For instance, a required response for "putting the leg into the pant leg when the pants are held by another person" involves active movement at the hip, knee, and foot joints. These components (or parts of a total action) must be performed against a "background" of postural alignment of body parts and ability to maintain that posture with movement of the leg. For example:

Posture/Position: sitting with support of a floor sitter corner chair to allow for maintenance of posture without use of arms for support.

Trainer Position: Sitting on floor next to child holding pants in front of student with waist spread and pants gathered toward waist.

Movement Components: Weight shift sideways to free leg.

PELVIS: Neutral and/or slight posterior tilt

HIP: Flexed with external rotation and/or in neutral (dependent on position of pants); abducted.

KNEE: Flexed

ANKLE: Plantar flexed (pointing downward)

PELVIS: Neutral and/or slight posterior tilt

HIP: Flexed with external rotation or neutral; abducted. Movement into extension.

KNEE: Extended

ANKLE: Extended but returned to neutral.

Analyses of movement can be important to: 1) Determine the best posture/position for dressing/undressing training; 2) Determine specific areas of movement (range of motion) where difficulties are present to identify hand placement for physical guidance (facilitation) procedures and/or movement skills that should be trained across situations.

INSTRUCTIONAL STRATEGIES IN DRESSING

SPECIFIED TARGET BEHAVIOR SPECIFIC PROBLEM IDENTIFICATION	Use flow-charts in dressing assessment to determine the desired response and to identify behavior that is interfering with skill acquisition. Determine appropriate alternate strategies for students with movement disorders.
DETERMINE POTENTIALLY REINFORCING CONTRIVED AND NATURAL REINFORCERS	The natural reinforcers in dressing must often be built into classroom programming. Going swimming would be a natural reinforcer for removing clothing. Going home acts as a reinforcer for putting outer clothing on. Contrived reinforcers in dressing are based on the child's likes and dislikes. Systematic praise, being allowed to engage in a reinforcing activity, food, or other events can act as contrived reinforcers for dressing.
DETERMINE ANTECEDENT ARRANGEMENTS	Use the guidance sequence (page12) to determine the number of antecedent arrangements required for the student to demonstrate the specified behavior. Antecedent arrangements which structure response possibilities -- such as clothing modification, clothing size, complexity of skill required -- are essential in a dressing program.
INSTRUCTIONAL PROGRAM	Develop a written objective that specifies antecedent and consequent events and expected behavioral responses.

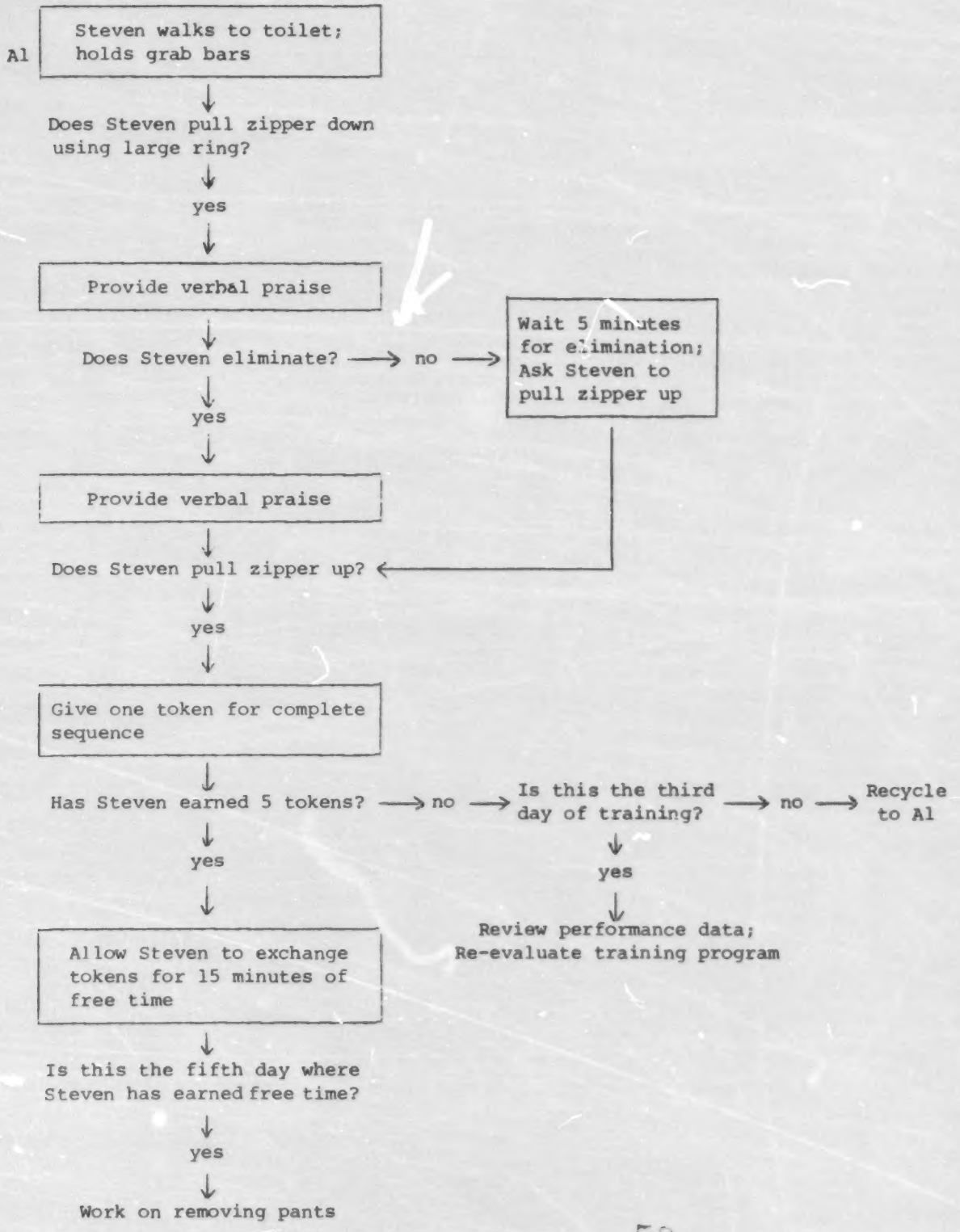
IMPLEMENTATION OF INSTRUCTIONAL STRATEGIES

Steven is a twelve-year-old student with spastic cerebral palsy. His muscles are tight in his arms and legs. Steven wears long leg braces and is able to walk for short distances using a walker. He is toilet trained and able to get to the toilet by himself using the walker. He is not fully independent in toileting because he is unable to manage his clothing independently. Dressing has been identified as an area of high priority.

SPECIFIED TARGET BEHAVIOR SPECIFIC PROBLEM IDENTIFICATION	TARGET: Steven will unzip and rezip his pants following urination. TARGET: Steven will remove his pants for elimination.
POTENTIALLY REINFORCING CONTRIVED AND NATURAL REINFORCERS	Natural Reinforcers: Being independent at toileting; praise for self-accomplishment. Contrived Reinforcers: Tokens to be redeemed for 15 minutes of engaging in an activity of Steven's choice.
ANTECEDENT ARRANGEMENTS	ALTERNATE STRATEGIES: Grab bars placed by the toilet for standing balance. Large ring attached to the zipper for grasp. Supervision in transferring from walker to grab bars. Verbal direction for transferring and for pulling zipper up and down.
INSTRUCTIONAL PROGRAM	Use grab bars and large ring attached to zipper. Use verbal direction for transfer and pulling zipper up and down. Steven pulls zipper down, eliminates, and pulls zipper up. Give verbal praise for successful accomplishment of each step. Give one token for successful completion of elimination and clothing management.

INDIVIDUAL INSTRUCTIONAL FLOW-CHART:

CLOTHING MANAGEMENT

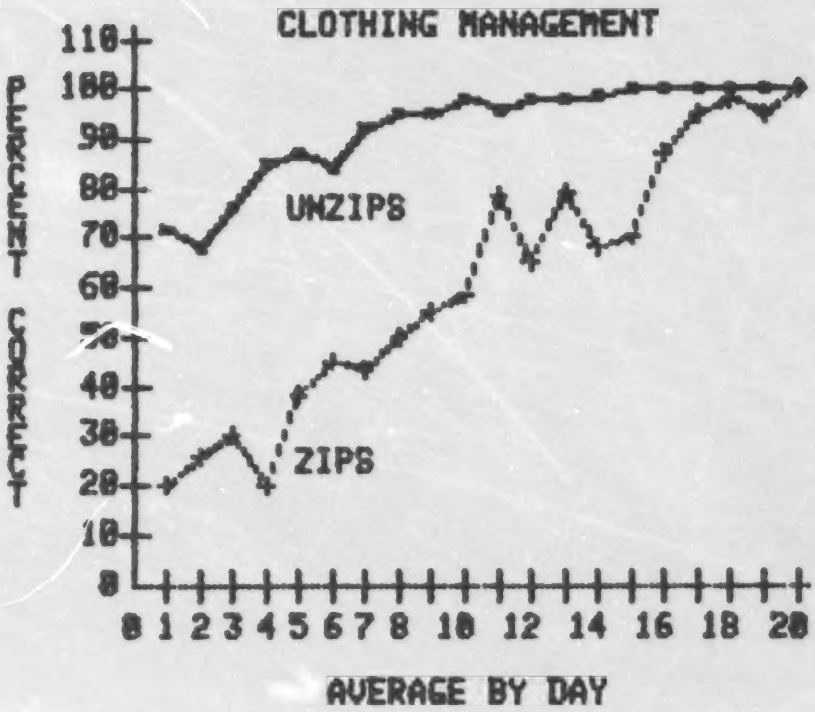

A1
Steven walks to toilet; holds grab bars
Does Steven pull zipper down using large ring?
yes
Provide verbal praise
Does Steven eliminate?
no
Wait 5 minutes for elimination; Ask Steven to pull zipper up
yes
Provide verbal praise
Does Steven pull zipper up?
yes
Give one token for complete sequence
Has Steven earned 5 tokens?
no
Is this the third day of training?
no
Recycle to A1
yes
Review performance data; Re-evaluate training program
Allow Steven to exchange tokens for 15 minutes of free time
Is this the fifth day where Steven has earned free time?
yes
Work on removing pants

INDEPENDENT CLOTHING MANAGEMENT

Child's Name: Steven Date: September 21, 1982

Trainer: KJC

Time/Location	Unzips	Eliminates	Zips	Comments
7:30 Home	—	+	—	
8:30 School	+	+	—	
10:00 School	+	+	—	
11:30 School	+	+	+	
2:30 School	—	—	—	
3:15 Home	—	+	—	
6:00 Home	+	+	+	
8:30 Home	+	+	—	Earned 2 tokens
Total	5	7	2	8 opportunities

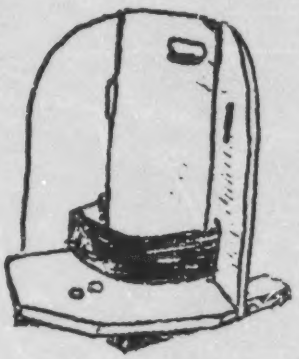

CLOTHING MANAGEMENT
110
100
90
80
70
60
50
40
30
20
10
0
PERCENT CORRECT
UNZIPS
ZIPS
0 1 2 3 4 5 6 7 8 10 12 14 16 18 20
AVERAGE BY DAY

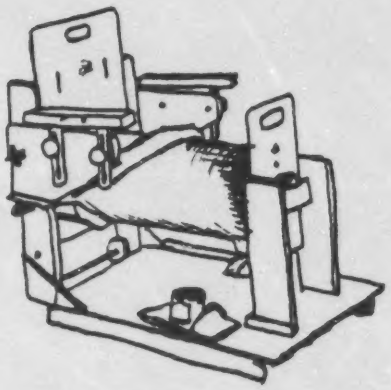
THE USE OF ALTERNATE STRATEGIES IN DRESSING

ADAPTIVE EQUIPMENT

EQUIPMENT FOR POSITIONING:

It is necessary for a student to have full sitting balance in order to independently dress himself. Dressing requires the coordinated use of both arms in order to manipulate clothing. Positioning equipment should provide the student with support in sitting so that s/he can perform dressing skills. To learn dressing patterns and sitting balance simultaneously is too difficult for most students. Providing the child with some support enables him to "concentrate" on acquiring and demonstrating the complex patterns required for dressing.





EQUIPMENT IN SPECIFIC DRESSING ACTIVITIES:

Much of the equipment available to assist in dressing requires excellent cognitive skill to be maximally effective. Under Companies Which Sell Adaptive Equipment in the appendix are listed those which deal in rehabilitation aids. Looking through catalogues from these companies will enable you to identify and select any dressing aids which might be helpful to children whom you are teaching to dress and undress. Many new devices are being marketed, so continue to look in catalogues regularly!

CLOTHING MODIFICATION:

For most children learning to dress and undress, modification of clothing can be the single greatest assistance. The following are some suggestions:

Difficulty	Possible Modification(s)
Has trouble putting head through shirt "hole".	Don't wear turtleneck shirts. Cut T-shirt necks down back or front and close with Velcro. Wear shirts that button down the front (part-way or all-the-way).
Has trouble getting arms through sleeves.	Wear short sleeve shirts. Wear shirts without tight sleeves (short or long) -- raglan sleeves are good.
Has trouble buttoning shirt.	Wear shirts that zip part-way down front. Replace buttonholes with Velcro closings. Select shirts with large buttons.
Has trouble getting legs into pants.	Wear short-leg pants. Wear pants with wide legs.
Has trouble getting pants over braces.	Slit pants up inside of legs and insert snap-tapes or Velcro or zipper closings.
Has trouble with elastic waists.	Select pants with waistbands (not tight).
Has trouble fastening pants.	Replace button or hook fastening with Velcro.
Has trouble with belt.	Select belt with cinch-type fastening or with pull-through fastening.
Has trouble with zippers.	Only choose clothing which zips in front. Use ring attached to zipper for easier grasp and pulling.
Has trouble with buttons.	Replace buttonholes with Velcro or select clothing without buttons.

TEACHING PRE-DRESSING SKILLS

MOVEMENT PATTERNS REQUIRED FOR DRESSING/UNDRESSING

To first teach the movement patterns involved in dressing/undressing without specifically teaching the child how to dress and undress using regular clothing can often be helpful with children with severe movement disorders. This preparation phase assists in minimizing the number of skills that the child will have to demonstrate in order to be independent in clothing management and allows the child to concentrate on specific clothing requirements such as front/back, etc.

SUGGESTION: The child should be dressed/undressed (if he is fully dependent) using the same movement patterns that will be required to independently change clothing. The teacher and family members who dress/undress the child should do so in exactly the same ways. In essence, the physical guidance should be a duplication of the movement patterns that will be used later by the child.

***DRESS/UNDRESS the child in a sitting position (if s/he will sit to dress/undress independently). DO NOT dress or undress the child on his/her back.

***Passively MOVE (GUIDE) the child from the shoulders and the hips. AVOID movement guided from either the hands or the feet.

***VERBALLY DESCRIBE what you are doing -- "I'm going to pull your arm out of the sleeves" -- for the child with receptive language and hearing skills. The "idea" of verbal direction is to provide an association between movement and the language label for the movement. However, simple verbal description may not be sufficient for a child.

***DRESS/UNDRESS the child in exactly the same manner each time. Using different positions, sequences, or movement patterns will provide inconsistent information about the sensory-motor patterns required for movement.

***MOVE the child with the sequence that will be easiest for the child to eventually duplicate independently. Choose a sequence that will allow for any limitations in movement (competence).

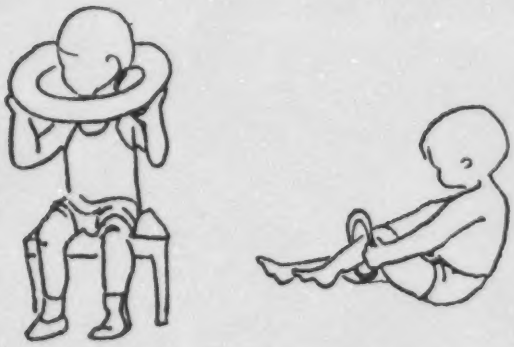
***MOVE clothing rather than the child's extremities if clothing is tight or difficult to manage. For instance, move a sleeve over the child's hand, rather than trying to pull the hand from the sleeve.

SUGGESTION: USE dress-up play as an activity to assist the child to acquire independent movement patterns. Larger clothing (modified for task difficulty) can be used to practice dressing, as well as part of play activities.

SUGGESTION: GRADE the amount of difficulty in movement patterns required for dressing/undressing by modifying the size of objects and clothing used to practice dressing/undressing skills.

***HOOPS AND RINGS -- Use of hula hoops and rings (from ring toss) allow the child to practice putting arms, legs, and head through "holes" similar to "holes" in clothing. Grasping hoops is easier for many children than grasping clothing, and hoops can be easily graded in size. In addition, hoops provide a "target" to which the child's movement can be guided.

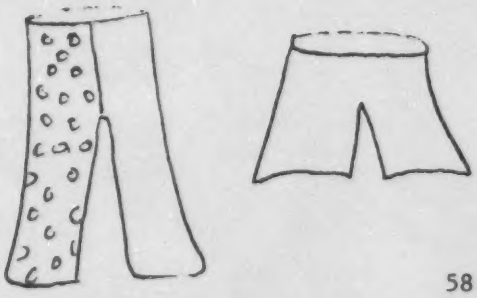
***PRACTICE CLOTHING -- can be easily made. Grading the size of the clothing from cloth "hoops" to regular clothing can allow the child to acquire movement patterns that are progressively more complex. Clothing can also be made so that practice in perceptual concepts can be taught through cueing.



Using plastic hoops

Cloth Hoops

Sequenced "dress up" clothes for practice



MANIPULATION PATTERNS REQUIRED FOR DRESSING/UNDRESSING

Manipulation patterns required in dressing/undressing are best taught with specific relation to clothing. Button boards, lacking boards, dressing cubes, and other instructional devices are often NOT helpful because the child learns movement patterns in reverse from what will be expected to manage his/her own clothing. Most fastening devices can be either substituted (see Clothing Modification section) or incorporated into practice clothing. Sewing lightweight plastic (such as pieces from detergent bottles) into practice clothing can assist the child to manage cloth more easily. However, these pieces must then be removed to fade assistance and to allow for fully independent dressing.

I. Training in Dressing:

Anderson, D. R., Hodson, G. D., & Jones, W. G. Instructional programming for the handicapped student. Springfield, Illinois: Charles Thomas, 1975.

Azrin, N. H., Schaeffer, R. M., & Wesolowski, M. D. A rapid method of teaching profoundly retarded persons to dress. Mental Retardation, 1976, 14, 29-33.

Campbell, P. H. Daily living skills. In N. Haring (Ed.), Developing effective individualized education programs. Washington, D.C.: Bureau of Education for the Handicapped, 1977.

Connor, F. P. Williamson, G. G., & Sieppe, J. M. Program guide for infants and toddlers with neuromotor and other developmental disabilities. New York: Teacher's College Press, 1978.

Copeland, M., Ford, L., & Solon N. Occupational therapy for mentally retarded children. Baltimore: University Park Press, 1975.

Dressing techniques for the cerebral palsied child. American Journal of Occupational Therapy, 1954, 8.

Finnie, N. Handling the young cerebral palsied child at home. New York: Dutton, 1975.

Ford, L. J. Teaching dressing skills to a severely retarded child. American Journal of Occupational Therapy, 1975, 29, 88-92.

FINDING THE TRAINING SOLUTION:
TOILETING

FINDING THE TRAINING SOLUTION: TOILETING

Many handicapped children are not tried on a toileting program because of difficulties encountered with proper positioning or with underestimating the child's training potential. Children with physical handicaps can be difficult to properly position for toileting. If the child is past toddler age, commercial potty chairs are often too small and the child may be unable to be properly positioned on a regular toilet. Many parents who attempt a toileting program with children with physical handicaps become discouraged when the child is unable to sit well and subsequently stop toilet training efforts.

AREAS OF TOILETING

Fully independent toileting requires the acquisition of competency in the following areas:

Bladder Training
Bowel Training
Communication of Toileting Needs
Mobility in Getting to/from
  Toileting Facilities
Transfer on/off Toilet
Management of Clothing

If toilet training is begun early, most severely handicapped students can be toilet trained to some extent at a fairly normal age. Some children may not acquire full competence at toileting. If the child has severe communication problems, he may have difficulty learning to adequately communicate his toilet needs. If physical limitations are severe, he may never be fully independent in getting to and from the toilet, on and off the toilet, or with managing his own clothing. Most children can be bladder and bowel trained if systematic, consistent procedures are employed and if proper positioning is obtained.

ESSENTIAL PREREQUISITE SKILLS

**The child must be free from medical problems that might make toilet training impossible. (All children should be checked for possible medical problems. The child's records should be checked before toilet training is initiated and medical consultation sought if toilet training is exceptionally difficult.)

TRAINING SEQUENCES
TOILETING

COMPETENCY-BASED TRAINING SEQUENCE
Has consistent pattern of urination.
Urination can be maintained on a toileting schedule.
Has consistent pattern of bowel control.
BMs can be maintained on toileting schedule.
Can communicate toileting needs.
Can get to toilet independently.
Can get on/off toilet independently.
Can manage clothing.
Is fully independent in toileting.

NORMAL SEQUENCE OF DEVELOPMENT
Indicates wet pants (15 M.)
Toilet regulated in daytime (18 M.)
Asks to go to toilet (21 M.)
Consistently communicates toilet needs (24 M.)
Toilets self (except for wiping) (30 M.)

Training Outcome	The child indicates need to use bathroom, goes to facilities with independent mobility, uses facilities, and manages clothing independently.
* Sequence of Steps	The child voids on toilet (without accidents) when taken to the toilet according to a predetermined schedule. The child goes to bathroom facilities with independent mobility and voids when told to go to the toilet according to a predetermined schedule. The child indicates need to use bathroom and goes to facilities with independent mobility and voids. The child indicates need to use bathroom, goes to facilities with independent mobility, and manages clothing independently.

* Mobility and communication steps can be worked on simultaneously and/or in different order dependent on overall difficulties demonstrated by child.

**The child must be receiving adequate liquids. (If the child has feeding difficulties and does not receive liquids frequently enough during the day, he may not eliminate frequently enough to begin toilet programming.)

**The child must stay dry for approximately two hours. (If the child eliminates more frequently than every two hours, it will be difficult to "catch" him consistently enough to begin a toileting program.)

**The child must be able to be positioned properly. (If the child has physical dysfunction, spasticity can be increased through improper positioning and the child may be unable to eliminate because of the tightness in the muscles. If the physical dysfunction is a condition of hypotonia or "floppiness", proper positioning insures the stability necessary for elimination.)

INSTRUCTIONAL STRATEGIES IN TOILETING

DETERMINING WHAT TO TEACH:

SPECIFIED TARGET BEHAVIOR
SPECIFIC PROBLEM IDENTIFICATION

The flow-chart in toileting will help determine where to begin a toilet training program. Specific data collection provides the basis for exactly where to begin with an individual child.

DETERMINING HOW TO TEACH:

DETERMINE POTENTIALLY REINFORCING CONTRIVES AND NATURAL REINFORCERS

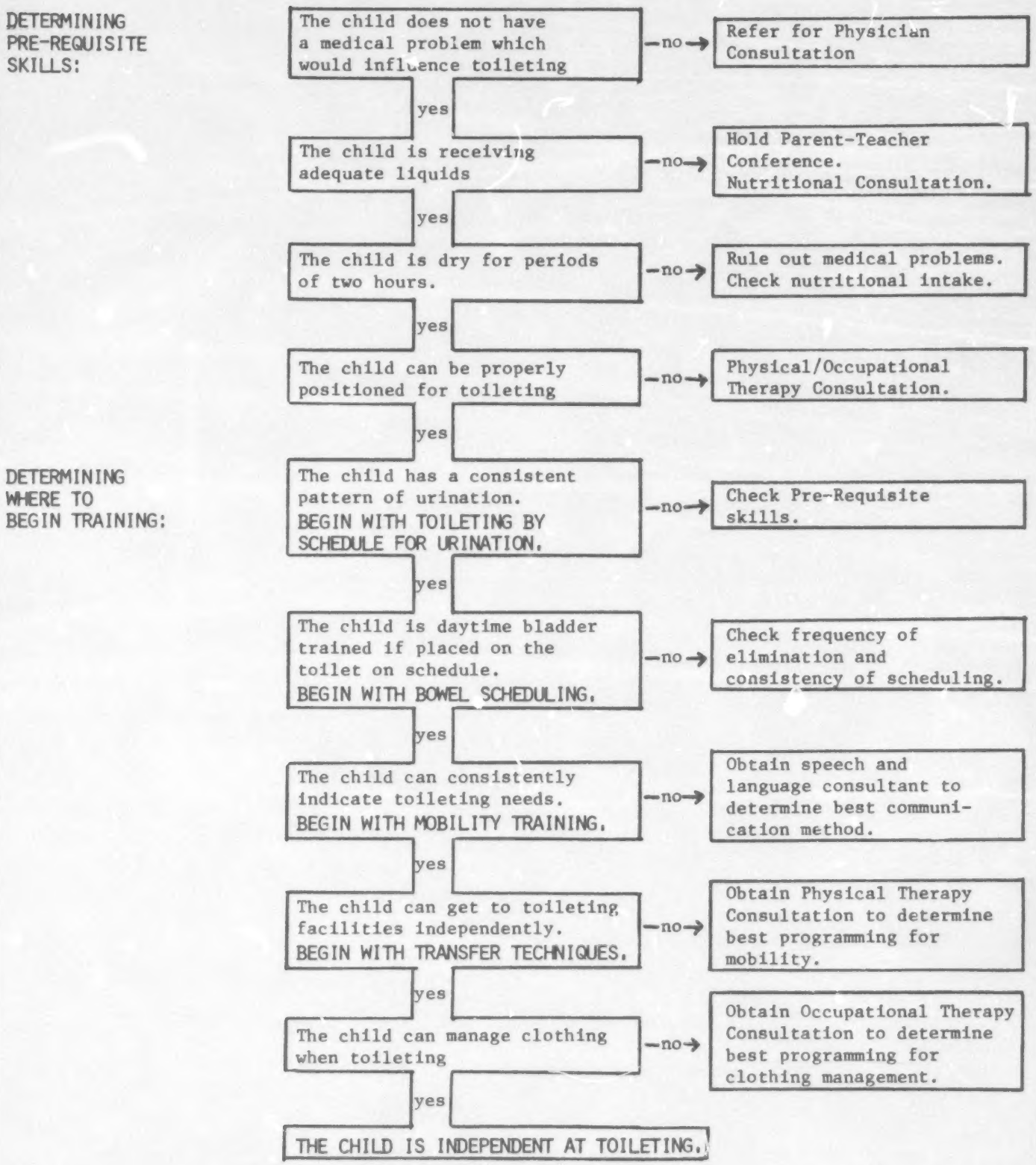
Natural reinforcers in toileting are largely internal events such as the feeling of accomplishment, etc. For some children, the feeling of wetness may be a significant enough consequence that the child may "work" to avoid being wet. For other children, avoiding wetness is not significant enough to act as a strong enough consequence.

Contrived reinforcers -- including attention, praise, stickers on a chart, etc. -- are generally more effective in toileting than natural reinforcers.

DETERMINING ANTECEDENT ARRANGEMENTS

A TOILET SCHEDULE is a data collection mechanism which structures response possibilities. This is essential to rapid toilet training.

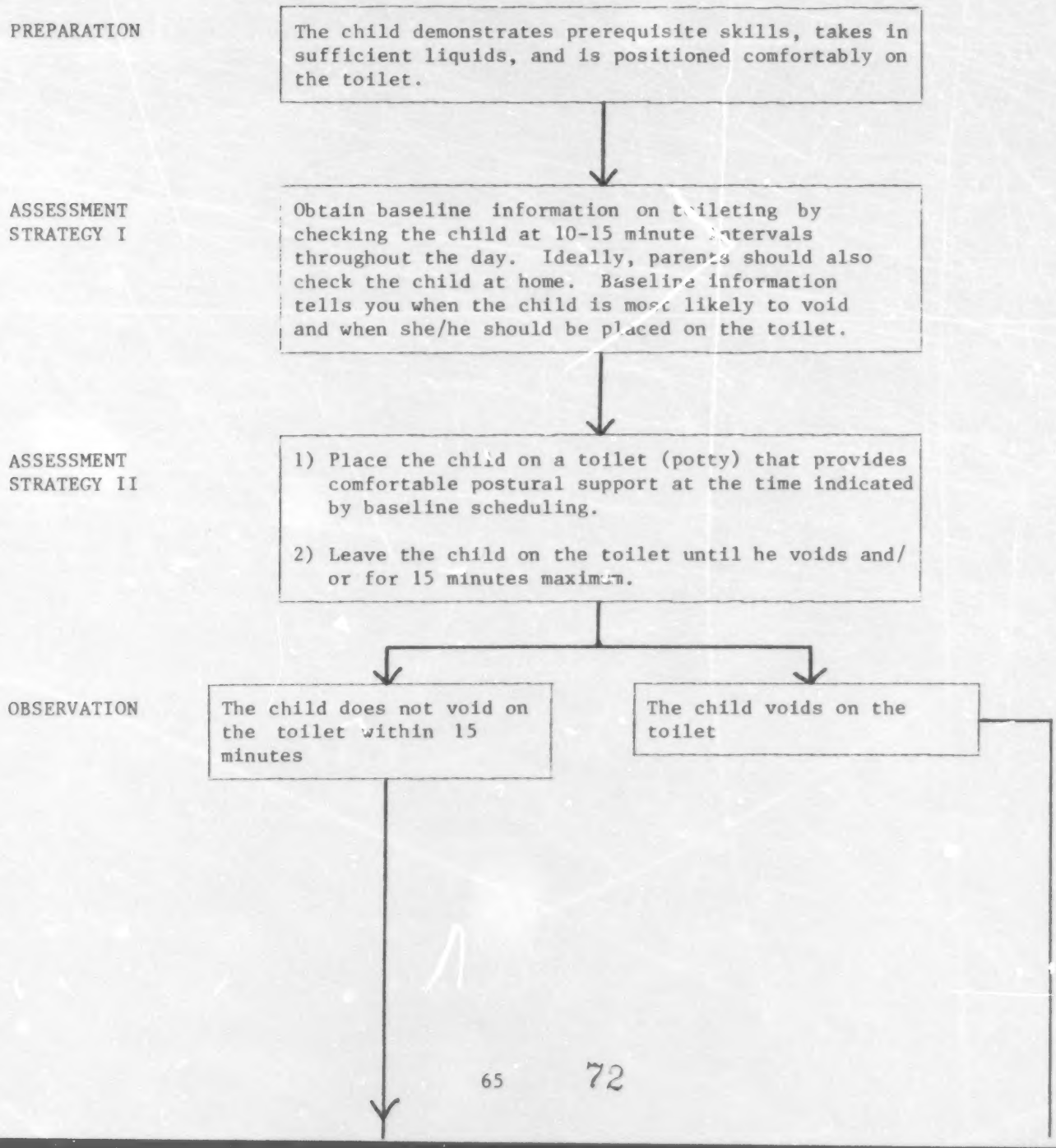
TRAINING IN TOILETING


DETERMINING PRE-REQUISITE SKILLS:
The child does not have a medical problem which would influence toileting
no
Refer for Physician Consultation
yes
The child is receiving adequate liquids
no
Hold Parent-Teacher Conference. Nutritional Consultation.
yes
The child is dry for periods of two hours.
no
Rule out medical problems. Check nutritional intake.
yes
The child can be properly positioned for toileting
no
Physical/Occupational Therapy Consultation.
yes
DETERMINING WHERE TO BEGIN TRAINING:
The child has a consistent pattern of urination. BEGIN WITH TOILETING BY SCHEDULE FOR URINATION.
no
Check Pre-Requisite skills.
yes
The child is daytime bladder trained if placed on the toilet on schedule. BEGIN WITH BOWEL SCHEDULING.
no
Check frequency of elimination and consistency of scheduling.
yes
The child can consistently indicate toileting needs. BEGIN WITH MOBILITY TRAINING.
no
Obtain speech and language consultant to determine best communication method.
yes
The child can get to toileting facilities independently. BEGIN WITH TRANSFER TECHNIQUES.
no
Obtain Physical Therapy Consultation to determine best programming for mobility.
yes
The child can manage clothing when toileting
no
Obtain Occupational Therapy Consultation to determine best programming for clothing management.
yes
THE CHILD IS INDEPENDENT AT TOILETING.

FINDING THE SOLUTIONS FOR INDIVIDUAL PROBLEMS IN TOILETING

PROBLEM: THE CHILD DOES NOT USE THE BATHROOM INDEPENDENTLY

THE CHILD DOES NOT VOID WHEN PLACED ON THE TOILET


PREPARATION
The child demonstrates prerequisite skills, takes in sufficient liquids, and is positioned comfortably on the toilet.
ASSESSMENT STRATEGY I
Obtain baseline information on toileting by checking the child at 10-15 minute intervals throughout the day. Ideally, parents should also check the child at home. Baseline information tells you when the child is most likely to void and when she/he should be placed on the toilet.
ASSESSMENT STRATEGY II
1) Place the child on a toilet (potty) that provides comfortable postural support at the time indicated by baseline scheduling.
2) Leave the child on the toilet until he voids and/or for 15 minutes maximum.
OBSERVATION
The child does not void on the toilet within 15 minutes
The child voids on the toilet

INTERPRETATION

DIFFICULTY	POSSIBLE SOLUTIONS
Does not void and/or voids very infrequently	Increase liquid intake through priming (give excessive liquids) in time period before placed on toilet.
Does not void often when placed on toilet	Check schedule to see if conditions and, therefore, probable time of voiding has changed.
Voids after being taken off toilet	Leave on toilet for 5-10 minutes, take off, and put back on 10-15 minutes later. Check positioning to insure that postural tone is normalized while sitting.
Has numerous "accidents" and/or is inconsistent in using the toilet.	Check reinforcer for toileting to insure that voiding on the toilet is more reinforcing than having an accident.

THE CHILD DOES NOT MOVE SELF TO TOILET

PREPARATION

The child demonstrates and/or is learning a form of mobility to be used within a closed environment -- e.g., crawling, scooter, tricycle, walker, walking with assistance, etc.

ASSESSMENT STRATEGY

1) Identify form of mobility that is present in child's behavior repertoire and/or is being learned through instruction. Consult with physical/occupational therapists.
2) Determine baseline rate of mobility by placing child in correct position (on scooter, with walker, etc.) and measuring both the distance moved and time to cover a specific predetermined distance.
3) Determine baseline rate over three opportunities (sessions).
4) Determine the distance away from the toilet that is the average distance moved within approximately 5 minutes. For example, if the student moves 5 feet per minute, the distance would be 25 feet away from the toilet.
5) Identify a reinforcer to be paired with toileting if moving to the toilet (and voiding) is not maximally reinforcing.
6) Position the student the determined distance away from the toilet approximately 5 minutes before the time for voiding indicated through scheduling data and tell child, "Go to the toilet."
7) Record both the distance traveled and whether the child voids on the toilet.

OBSERVATION

The child does not travel the required distance and void on the toilet.

The child does travel the required distance and void on the toilet.

INTERPRETATION

DIFFICULTY	POSSIBLE SOLUTIONS
Has accident while moving to toilet	Start child to toilet earlier. Decrease distance to be traveled by a small amount.
Does not travel to toilet at fast enough rate.	Change reinforcer. Check mobility training procedures.
Does not void on toilet and/or has frequent accidents	Refer to "void when placed on toilet" section.
Does not travel to toilet with only verbal direction	Physical guidance Cueing Prompting

THE CHILD DOES NOT INDICATE NEED TO USE THE TOILET

PREPARATION

The child demonstrates some form of communication and/or is acquiring communication skills.

ASSESSMENT STRATEGY

1) Identify form of communication (e.g., vocalization, gesture, point to pictures, speech, sign, etc.) that is in the child's repertoire and/or being learned through instruction. Consult communication specialist/speech therapist.
2) Determine baseline rate for communicating word, sign, etc. for toilet in a structured instructional situation by asking child to "say toilet," "show me the sign for toilet," etc. Work with speech therapist to determine extent to which sign, word, etc. is in child's repertoire in a structured situation.
3) If form of communicating toilet is not within current repertoire, establish an instructional program for "show me, point to, gesture for toilet". The communication specialist/speech therapist may be helpful in this step.
4) If child is able to approximate word, sign, etc. sufficient to say that form for toilet is within repertoire, before child is started to toilet at scheduled time, say "name, we are going to the toilet. Tell me 'toilet'." Maintain baseline data for at least one week (approximately 15 opportunities) to establish use of communication in the training situation.

OBSERVATION

The child does not communicate toilet spontaneously and/or with verbal cue ("Tell me.").

The child communicates toilet spontaneously or with verbal cue ("Tell me").

INTERPRETATION

DIFFICULTY	POSSIBLE SOLUTIONS
Communicates accurately (or with recognizable approximation) less than 30% of the time	Consult with speech therapist. Establish instructional program to be done in structured way. Check reinforcer.
Shows inconsistent use of communication for toilet	Consult speech therapist. Physical guidance, imitation, as appropriate dependent on communication form.
Has accidents while communicating and/or traveling to the toilet	Start sequence earlier in relation to scheduled times for voiding. Refer to "Travel to Toilet" section.

THE CHILD IS UNABLE TO GET ON/OFF TOILET INDEPENDENTLY

PREPARATION

The child voids on toilet without accidents, can travel to and/or communicate need to use toilet.

ASSESSMENT STRATEGY

1) Determine best form of transfer to be used in relation to form of mobility used by child, e.g., floor to toilet if child is on scooter, crawling; pivot from walker, etc. Consult therapist to determine best and easiest transfer.
2) At toilet - position student as appropriate (scooter, walker, crawling, etc.) and say "_name_, get on the toilet." Maintain baseline data for at least one week (approximately 15 opportunities) to establish assessment of getting on toilet. Repeat procedures for getting off the toilet.

OBSERVATION

The child does not get (transfer) on/off toilet independently

The child gets (transfers) on/off toilet independently.

INTERPRETATION

DIFFICULTY	POSSIBLE SOLUTIONS
Potty being used is unstable, can't be used for support in transfer	Consult therapist to modify potty and/or adapt toilet for use.
Movement coordination is inefficient	Consult therapist to determine easier method.
Sequence of movement actions is difficult	Consult therapist to determine easier method and/or breakdown of steps for instruction. Physical Guidance.
Performs but is too slow to be functional	Consult therapist. Check reinforcer.
Has accident while transferring to toilet and/or in getting to toilet	Start student on toilet earlier. Refer to "Travel to Toilet" section.

THE CHILD DOES NOT MANAGE CLOTHING INDEPENDENTLY IN RELATION TO TOILETING

PREPARATION

The child voids on toilet without accidents when placed on toilet, can communicate need to use toilet, and get to toilet independently with some form of mobility.

ASSESSMENT STRATEGY

1) Determine the ways in which clothing will have to be manipulated. Specific skills required will be dependent on form of mobility and transfer being used by the child. An occupational/physical therapist can be helpful in determining the easiest ways to manipulate clothing while toileting.
2) At toilet - position student in front of toilet as appropriate (on scooter, with walker, etc.) and say, "name, pull down your pants" (and/or whatever is appropriate and required action). This direction will vary dependent on manipulation schemes and sequences identified in Assessment step 1. Repeat for putting clothing on after toileting.
3) Maintain baseline data for at least one week (approximately 15 opportunities) to establish assessment for clothing management on and off.

OBSERVATION

The child does not manage clothing independently (on/off/both)

The child is fully independent in clothing management required at toileting

THE CHILD IS INDEPENDENT IN TOILETING.

INTERPRETATION

DIFFICULTY	POSSIBLE SOLUTIONS
Lack of balance in standing, sitting, or other position	Possible use of adaptive equipment, i.e., grab bars, adaptive seating, etc. Work on balance separately from toileting to increase balance. Consult physical/occupational therapist to determine possibility of alternate positions.
Inability to maintion balance without arm support to free arms for clothing manipulation	Use of adaptive aids for clothing (see Dressing section) to decrease manipulation required and/or to provide balance (i.e., grab bars). Work on improving balance separately from toileting to increase length of time balance can be maintained. Consult physical/occupational therapist to determine other alternate strategies.
Diminished coordination in manipulation and/or absence of proper manipulation schemes	See Dressing section. Consult with occupational therapist for possible task adaptation. Modify clothing to make manipulation less complex (i.e., velcro at waistband rather than hook/eye).
Movement competence seems sufficient for task but child doesn't demonstrate sequence	Chaining Physical guidance Check reinforcer
Movement competence seems sufficient for task but child doesn't perform required manipulation scheme(s)	Physical guidance manipulation practice for specific scheme with clothing but separate from toileting to provide added learning opportunities.

	Other events -- such as running water -- may assist a child in eliminating at a specified time, but should not be used unless essential.
INSTRUCTIONAL PROGRAM	Develop a written objective that specifies antecedent and consequent events and expected behavioral response.

IMPLEMENTATION OF INSTRUCTIONAL STRATEGIES

Betsy is a five-year-old retarded child with delayed motor development. She is able to crawl adequately, but sitting balance is not good when she is unsupported. She is able to feed herself and performs some initial dressing skills. She reacts appropriately to people, but has only limited babbling and is not able to speak. Some gestural communication is present. The area of toileting was identified as a priority target area.

SPECIFIED TARGET BEHAVIOR SPECIFIED PROBLEM IDENTIFICATION	Prerequisite skills were checked and determined to be adequate. A wooden potty was selected for training and placed in the bathroom next to the classroom. Determine if the child has a consistent pattern of urination. TARGET: Develop a consistent pattern of toileting by schedule.
POTENTIALLY REINFORCING CONTRIVED CONSEQUENCES	Sips of coke, juice; foods such as ice cream or cake (those not generally included in her lunch); attention; praise and attention from people outside her classroom environment; praise and attention from her family.
ANTECEDENT ARRANGEMENTS	Determination of urination pattern by checking Betsy every 15 minutes to determine is she is wet/dry/soiled. Placement of child on potty at scheduled times. Set timer for sitting on potty until she eliminates or for a maximum of 15 minutes.

INSTRUCTIONAL PROGRAM	Use wooden potty chair. Place Betsy on the potty at scheduled times determined from data collected prior to training. Set timer for 15 minutes. Check child at 5 minute intervals to see if she has eliminated. Take child off potty when she eliminates or at the end of 15 minutes. Give reinforcing food (small portion) with praise and attention if she eliminates on the potty. Chart is marked. If wet during the day or when placed on the potty, pants will be changed with as limited attention, scolding, as possible.

USE OF ALTERNATE STRATEGIES FOR TOILETING

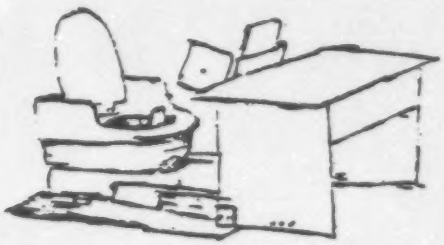
PROPER POSITIONING

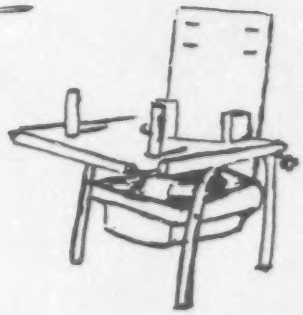
Before toilet training is started, proper positioning should be devised. The child should be able to be positioned on a potty or the toilet in as normal alignment as possible. He should sit with adequate flexion at the hips, feet supported, and legs held apart and relaxed.

ADAPTIVE EQUIPMENT

Obtaining the proper toileting equipment for older children can be difficult. Ready-made pottys are designed for younger infants and toddlers and seldom fit an older child appropriately. For older students, particulary those with movement dysfunction, sitting on the toilet is not secure enough positioning. Muscles may become tight, causing difficulty wit elimination, if the child has to concentrate on balance.

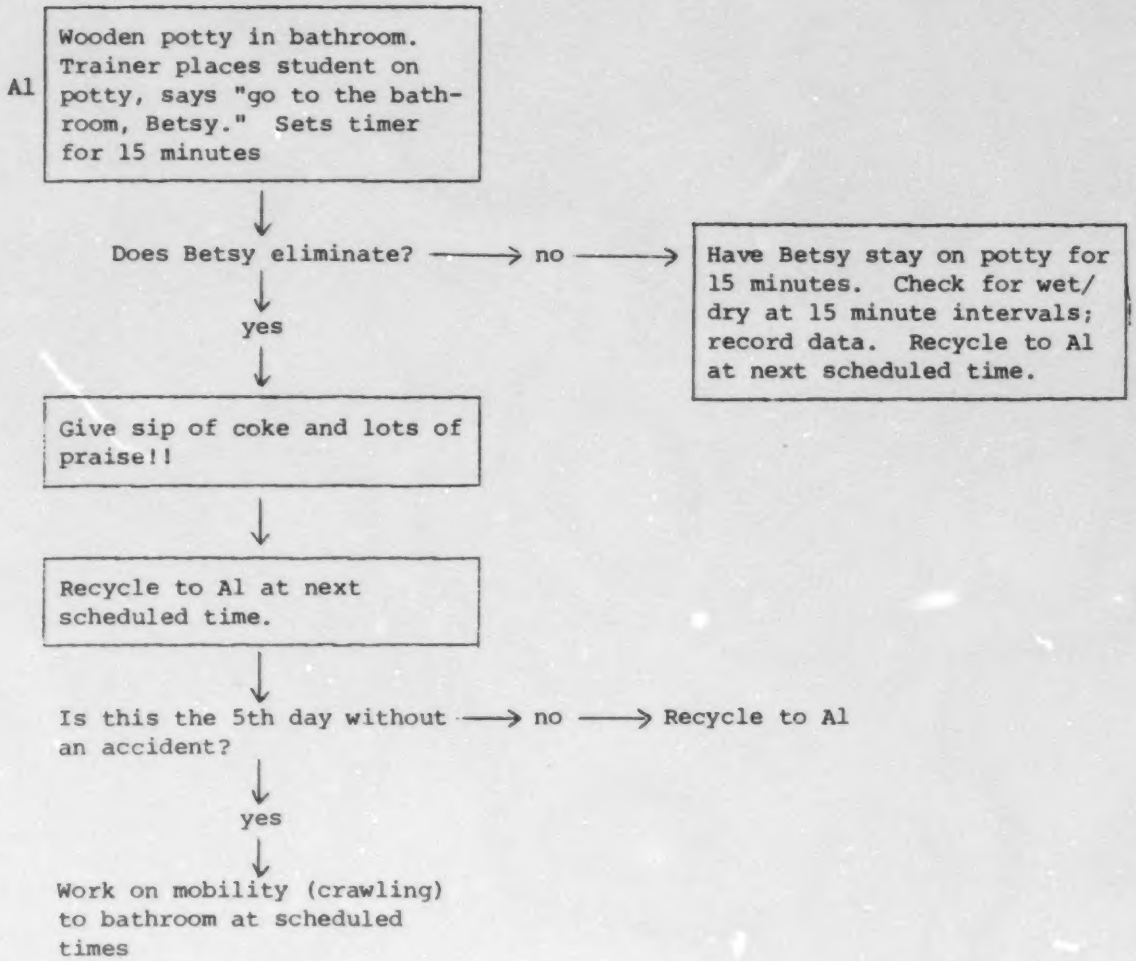
Two basic forms of commercial pottys are available. One type requires excellent sitting balance and provides only minimal support when sitting. The Tommy Tippee Saddle Potty is an example of this type of potty. Other pottys have arms and are better for children with limited sitting balance. Some commercial pottys also have trays. The collapsible wooden potty is an example of a potty that provies good support for a small child with poor sitting balance.





INDIVIDUAL INSTRUCTIONAL FLOW CHART:

TOILETING


A1
Wooden potty in bathroom. Trainer places student on potty, says "go to the bathroom, Betsy." Sets timer for 15 minutes
Does Betsy eliminate?
no
Have Betsy stay on potty for 15 minutes. Check for wet/dry at 15 minute intervals; record data. Recycle to A1 at next scheduled time.
yes
Give sip of coke and lots of praise!!
Recycle to A1 at next scheduled time.
Is this the 5th day without an accident?
no
Recycle to A1
yes
Work on mobility (crawling) to bathroom at scheduled times

TOILETING DATA

NAME Betsy

Week of: Nov 1, 1982

MON.	TUES.	WED.	THURS.	
—	—	—	—	9:15
—	—	—	—	9:30
—	—	—	+	9:45
—	+	—	—	10:00
+BM	—	—	—	10:15
—	—	+	—	10:30
—	—	—	—	10:45
—	—	—	—	11:00
—	BM	—	—	11:15
—	+	+	—	11:30
—	—	—	+	11:45

Week of: Nov. 8, 1982

MON.	TUES.	WED.	THURS.
—	—	—	—
—	—	+	—
—	—	—	—
+BM	+	—	+
—	—	BM	—
—	—	—	—
—	BM	—	—
—	—	—	—
+	+	—	+
—	—	+	—
—	—	—	—

Week of: Nov. 15, 1982

MON.	TUES.	WED.	THURS.	
—	ABSENT	ABSENT	—	9:15
+BM			—	9:30
—			—	9:45
—			BM	10:00
—			+	10:15
+			—	10:30
—			—	10:45
—			+	11:00
—			—	11:15
—			—	11:30
+			—	11:45

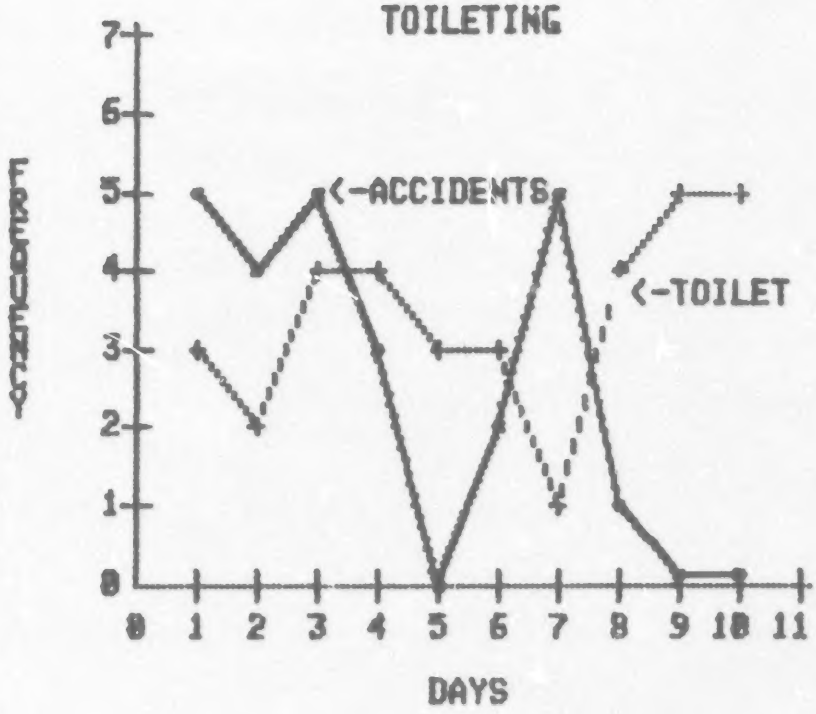
Week of: Nov. 22, 1982

MON.	TUES.	WED.	THURS.
			Holiday

- Dry
+ Urine
BM Bowel movement
+BM Urine and Bowel movement

+ Urine in potty — D
+ Dry on potty — D

82


TOILETING
7
6
5
4
3
2
1
0
<-ACCIDENTS
<-TOILET
0 1 2 3 4 5 6 7 8 9 10 11
DAYS

USEFUL GUIDES IN TOILET TRAINING

Baker, B. L., Brightman, A. J., Heifetz, L. J., & Murphy, D. H. Toilet training. Champaign, IL: Research Press, 1976.

Finnie, N. Handling your cerebral palsied child at home. New York, New York: Dutton, 1975.

Foxx, R. M. & Azrin, N. H. Toilet training the retarded. Champaign, Illinois: Research Press Company, 1973.

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Levine, M. L., & Elliott, C. B. Toilet training for profoundly retarded with limited staff. Mental Retardation, 1970, 8, 48-50.

Osarchuk, M. Operant methods of toilet behavior training of the severely and profoundly retarded: A review. Journal of Special Education, 1973, 7, 423-437.

Rentfrow, R., & Rentfrow, D. Studies related to toilet training of the mentally retarded. American Journal of Occupational Therapy, 1969, 23, 425-430.

ADAPTIVE EQUIPMENT

ADAPTIVE EQUIPMENT

Equipment is designed to help motorically impaired children maintain correct body alignment, acquire mobility skills, and perform various related skills such as eating and drinking, dressing, toileting, communication, or playing. Many therapists and teachers have creative ideas that can be fabricated into equipment designed to help make a handicapped child easier to feed. In addition, many new products are commercially marketed each year so that if a desired piece of equipment cannot be located in a current catalogue, check with a distributor or with the representatives in local health-medical supply companies.

This section is designed to provide basic information to use to select and purchase or fabricate equipment. Lists of commercial distributors are provided with general information about the types of equipment available through those companies. Resources that can be used to locate plans for making and designing your own equipment are also listed. Types of equipment available are clasified into the following categories:

TRANSPORTATION (transporter chairs, strollers, car seats)

ADAPTIVE CHAIRS (wheelchairs and positioning aids)

OTHER POSITIONING AIDS (prone standers, standing boards, sidelyers)

SELF-CARE DEVICES (feeding and self-feeding)

SELECTING EQUIPMENT

Many professionals are available to help select and acquire the appropriate positioning equipment. Physical and occupational therapists are most likely to be familiar with the child's needs as well as the variety of local and national sources for equipment. However, some physicians, nurses, social workers, teachers, and other professionals may be able to help acquire the most beneficial and cost-effective pieces of equipment. There are also often local people who operate medical supply companies who can be helpful with equipment selection. However, some of these individuals may only have access to certain equipment manufacturers and may not be able to acquaint you with all types of available devices.

The quality of manufacture, durability of equipment, and cost should all be considered when selecting equipment. In addition, equipment must be selected on the basis of expected functional use. The cost of adaptive positioning devices can be very high -- particularly if the selected equipment will perform a variety of functions such as positioning and mobility. Children who will require a piece of equipment for only a short period of time may be able to obtain equipment by constructing the device at home/school or through borrowing equipment if local "lending banks" exist.

Many agencies maintain equipment borrowing services and allow families (or schools) to borrow or rent equipment for the time period needed by the child. Local chapters of parent groups also lend equipment among families to reduce the costs of equipment purchase. Check with local agencies that serve motorically handicapped children (like Easter seal, Muscular Dystrophy Associations, United Cerebral Palsy) and with local parent groups to find out about borrowing or renting equipment. Also check with a physician or social worker about programs that may be available to financially assist in equipment purchase. Many state Bureau of Crippled Children's Services, for instance, provide funding for specialized equipment. Social Security or Medicaid/Aid to Dependent Children programs also pay full or partial equipment costs. Private Insurance may pay full or partial costs through major medical insurance.

Be sure to find out about possible funding sources before you order equipment. Many of these resources have special requirements to qualify for funding. For instance, some programs require physican prescription for equipment. Others may require prior-approval before ordering and will not reimburse for already ordered equipment. Still other programs may have contractual relationships with specific providers and will not cover equipment purchased from a non-provider.

Most adaptive equipment for home and school use can be easily made by an individual with some carpentry skills. Many therapists and agencies that serve motor-impaired individuals have plans for building a variety of types of adaptive equipment. Some agencies even have resources such as retired individuals, vocational education classes, Bell Telephone Pioneers, and sheltered workshops that help build equipment for individual children. The disadvantages of home-construction often include appearance, durability, and time required for fabrication. However, lower cost may be a significant advantage!

COMMERCIAL RESOURCES FOR ADAPTIVE EQUIPMENT

The following list includes the major distributors of equipment in the United States. This list is not comprehensive and you may locate equipment through a source which is not listed here. In addition, local companies which sell health-medical equipment and products are not listed here but can be excellent resources for equipment. Catalogues are available from each company.

ACHIEVEMENT PRODUCTS FOR CHILDREN
P.O. Box 547
Mineola, NY 11501

Transportation: Mobility buggy with insert; trunk jackets

Chairs: Corner floor chairs/trays; wooden toddler chairs/trays

Other Positioning Aides: Wedges with straps; standing boards

Mobility Aides: Child crawler

Self-Care: Feeding, bathing, and toileting aides/devices

ADAPTIVE EQUIPMENT COMPANY
175 Parker Court
Chardon, OH 44204

Chairs: Bolster chair/tray; corner chair

Other Positioning Aides: Adaptive harness; standing table; prone board

Mobility Aides: Prone scooter

CHILDCRAFT EDUCATION CORPORATION
20 Kilmer Rd.
Edison, NJ 08817

Mobility Aides: Wooden push wagon; Irish mail cart

Adaptive Play and Learining Equipment: Wooden swing; infant-preschool toys

COMMUNITY PLAYTHINGS
Rifton, NY 12471

Chairs: Floor corner chairs/trays; toddler preschool adaptive chairs/trays

Other Positioning Aides: Sidelyer; standing boards; prone boards

Mobility Aides: Kiddie car; tricycles with attachments; scooters

Adaptive Play and Learning Equipment: Adjustable easel/tables

EQUIPMENT SHOP
P.O. Box 33
Bedford, Mass. 27701

Chairs: Tripp trapp chair; corner floor chairs/trays

Other Positioning Aides: Standing boards; seat belts

Mobiltiy Aides: Scooter boards; tricycle adaptations

KAYE PRODUCTS, INC.
1010 E. Pettigrew St.
Durham, NC 27701

Transportation: Seat inserts for strollers

Chairs: Bolster chair/tray; corner chairs/trays

Other Positioning Aides: Prone board

Self-Care: Prone support potty with table top

J.A. PRESTON, INC.
60 Page Rd.
Clifton, NJ 07012

Transportation: Mainstreamer transporter chair; stroller insert

Chairs: Wheelchairs; corner chair/tray; floor sitter; hammock chair

Other Positioning Aides: Wedges; bolsters; feeder seat; sidelyer; standing tables; standing boards; prone boards

Self-Care: Adaptive equipment for feeding, bathing, toileting; dressing; grooming

Adaptive Play and Learning Equipment: Specialized materials for play and learning; head pointer

Communication Aides: Head pointer; electronic communication boards

Mobility Aides: Scooters; mustang scooter; walkers

FRED SAMMONS
Box 32
Brookfield, Ill. 60513

Self-Care: Devices for feeding, dressing, grooming

Resources for Plans for Home Construction of Equipment:

Many plans for fabricating adaptive equipment devices have most often been passed on from person to person through workshops or inquiries. Some of these plans can be obtained by contacting local agencies servicing motorically impaired children. The books included in the listing below in some cases provide descriptions of equipment with illustrations, and in other cases, provide the actual plans. However, all materials illustrate types of adaptive equipment that can easily be constructed.

Connor, F., Williamson, G., & Siepp, J. Program guide for infants and toddlers with neuromotor and other developmental disabilities. New York: Teachers College Press, 1978.

Chairs: Corner; pelvic-tilt chair; sawhorse chair

Other Positioning Aides: Prone board; sidelyer

Adaptive Play and Learning Materials: Peg handle grips

Guidelines and illustrations are provided for each piece of equipment. Full instructions for building several pieces are included but are not provided for all equipment described in the book.

Finnie, N. Handling your young cerebral palsied child at home. New York: Dutton, 1975.

Chairs: Box chair, barrel chair; sawhorse chair; hammock chair

Other Positioning Aides: Hammocks; wedges; prone boards

Adaptive Play and Learning Materials: Many suggestions for toy modifications

Mobility Aides: Scooter; tricycle; chair walker

Plans are provided for only a few pieces of equipment. However, all designs are well-enough illustrated to allow for easy copying.

Golbin, A. (Ed.). Cerebral palsy and communication: What parents can do. Washington, D.C.: Job Development Laboratory, George Washington University, 1977.

Communication: Head pointer; manual communication boards; simple electronic communication boards

This manual provides good guidelines on positioning for speech acquisition as well as full explanation of alternate communication modes (communication boards, books, devices) appropriate for children with severe motor disorders.

High, E. C. A resource guide to habilitative techniques and aids for cerebral palsied persons of all ages. Washington, D.C.: Job Development Laboratory, George Washington University, 1977.

Transportation: Transporter chairs; car seats

Chairs: Various wheelchairs; corner chair; other chairs

Other Positioning Aides: Prone boards; standing boards

Self-Care Skills: Equipment for feeding, dressing, toileting, bathing, and grooming

This manual references both home constructed and commercial materials. Very few plans are provided but illustrations of equipment are clearly drawn and easy to follow.

Robinault, I. P. Functional aids for the multiply handicapped. New York: Harper and Row, 1973.

Transportation: Trunk support; car seat

Chairs: Corner; inserts for large chairs

Other Positioning Aides: Standing board

Self-Care: Feeding and bathing equipment; toilet chairs

Communication: Communication boards; head pointers; typewriter adaptations

Many new developments in adaptive equipment have occurred since 1973 when this book was written. However, instructions for building and guidelines for using some types of adaptive equipement are still current. The book includes equipment for both children and adults and gives examples of equipment for which better designs are now available. Be sure and check with your child's therapist or teacher before constructing items pictured in this book.

REFERENCES

Azrin, N. H., Schaeffer, R. M., & Wesolowski, M. D. A rapid method of teaching profoundly retarded persons to dress. Mental Retardation, 1976, 14, 29-33.

Bricker, W. A., & Campbell, P. H. Individual education planning. Akron, Ohio: Children's Hospital Medical Center, 1982a.

Bricker, W. A., & Campbell, P. H. Motivating behavior change. Akron, Ohio: Children's Hospital Medical Center, 1982b.

Campbell, P. H. Problem-oriented approaches to feeding the handicapped child. Akron, Ohio: Children's Hospital Medical Center, 1982 (revised edition).

Campbell, P. H. Individualized team programming with infants and young handicapped children. In D. McClowery, A. M. Guilford, & S. Richardson (Eds.), Infant communication: Development, assessment, and intervention. New York: Grune and Stratton, in press.

Campbell, P., Green, K., & Carlsen, L. Approximating the norm through environmental and child-centered prosthetics and adaptive equipment. In E. Sontag, N. Certo, & J. Smith (Eds.), Educational programming for the severely and profoundly handicapped. Reston, Virginia: Council for Exceptional Children, 1977.

Hanson, M. J., & Campbell P. H. Teaching your motor delayed child. Baltimore: University Park Press, in press.

Piaget, J. The origins of intelligence. New York: Norton Books, 1952.

Robinson, C., & Robinson, J. H. Sensorimotor functions and cognitive development. In M. Snell (Ed.), Systematic instruction of the moderately and severely handicapped. Columbus, Ohio: Charles E. Merrill Publishing Co., 1978.